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ENVIRONMENT & LANDSCAPE
Environmental Statement

A13/A117 JUNCTION IMPROVEMENT – ENVIRONMENTAL STATEMENT VOL. 1 09/92

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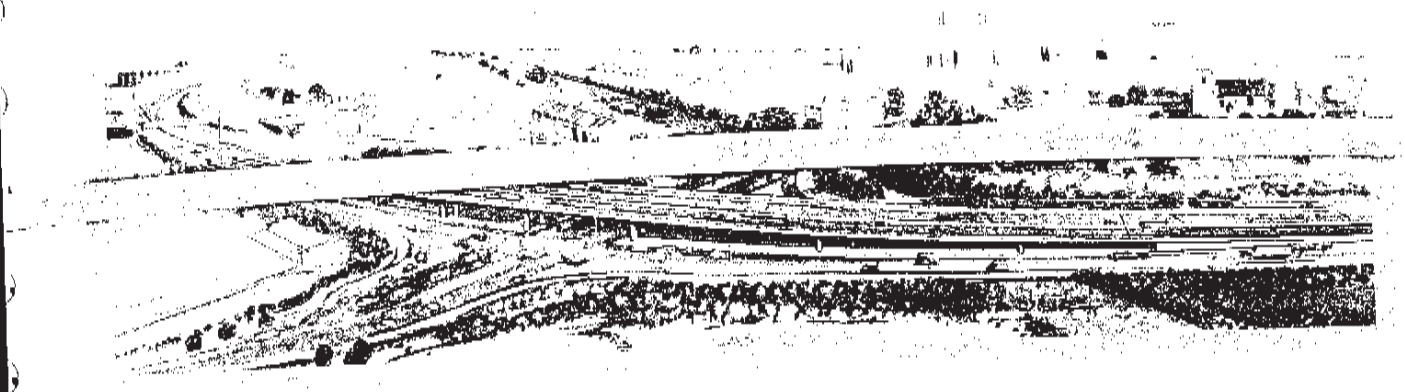

SEPTEMBER 1992

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A13/A117 JUNCTION IMPROVEMENT

ENVIRONMENTAL STATEMENT & NON TECHNICAL SUMMARY

This document relates to the proposal to construct the A13/A117 Junction Improvement Scheme. The Environmental Statement is an assessment of the environmental effects of the proposal. Anyone wishing to comment on, or object to, any aspect of the published proposals should write to the Secretary of State for Transport at the offices of the Department shown above, not later than 7th January 1993.

Unwithdrawn objections made to the Orders previously published in October 1990 will remain valid.

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A13/A117 JUNCTION IMPROVEMENT

This Environmental Statement is in two volumes:

VOLUME I: ENVIRONMENTAL STATEMENT

Environmental Statement

Non-Technical Summary

VOLUME II: SPECIALIST REPORTS

Section	
1	Ecological Appraisal Report
2	Air Quality Report
3	Noise Report
4	Vibration Effects

A13/A117 JUNCTION IMPROVEMENT
ENVIRONMENTAL STATEMENT - VOLUME I

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SECTION 1

INTRODUCTION

1.0 INTRODUCTION

1.1 Objectives of the Scheme

1.1.1 The existing junction carries eastbound traffic over a 2 lane flyover and the westbound traffic through the signal controlled junction. Traffic demand exceeds the capacity of this road and causes long delays at the junction. With an expected increase in traffic demands this junction would be a major source of congestion and delays to motorists. Pedestrians and cyclists would also suffer delays and intimidation at the junction.

1.1.2 The objectives of the Department of Transport's policies for trunk road improvements are:

- to assist economic growth by reducing transport costs;
- to improve the environment by removing traffic from unsuitable roads in towns and villages; and
- to enhance road safety.

Within London the Department's policies are directed towards:

- reducing congestion and delay to traffic, including public transport;
- securing improved road safety for users including pedestrians and cyclists;
- facilitate environmental improvements in major road corridors and neighbouring areas;
- giving priority to a range of traffic management measures design to make better use of the existing road network; and
- new road construction designed to realise the potential of the present network by removing the worst pinch points and to provide environmental relief in inner London, better orbital movement outside central areas, relief from congestion in outer London town centres, better access to poorly served and developing areas such as Docklands and East London and improved links to the M25.

1.1.3 The improvement of the A13/A117 junction will satisfy these policies by:

- reducing the existing congestion;
- reducing the risk of accidents particularly for pedestrians and cyclists;
- improving the environment;
- improving access into Docklands; and
- reducing the impact of the junction on the surrounding locality.

1.1.4 The location of the scheme area is shown in Figure 1.1. This environmental statement considers the stretch of the A13 from just west of Noel Road footbridge to Gooseley Lane footbridge in the east and the A117 where it crosses the A13.

1.2 Environmental Assessment Regulations

1.2.1 This Environmental Statement is issued in accordance with EC Directive 85/337 as applied by Section 105A of the Highways Act 1980. This Directive requires that all schemes which are likely to have a significant effect on the environment must be subject to the process of environmental assessment.

1.3 Statutory Background

1.3.1 The A13/A117 Junction Improvement forms part of a programme of improvements which the Department of Transport proposes to undertake along the A13 corridor.

1.3.2 The procedural stages undertaken to date are as follows:

- o A Public exhibition and presentation of this scheme was held in October 1989.
- o The scheme was generally welcomed locally and as a result of comments made at the time the following modifications have been made:
  - (a) The proposal to make Noel Road two way at its junction with the A13 was deleted and the present traffic arrangement has been retained.
  - (b) The environmental barrier at Masefield Gardens has been extended to Gooseley Lane.
  - (c) The environmental barrier on the north-west side has been extended further to the west by 25 metres.
- o Draft Statutory Orders incorporating these changes were published in October 1990. This included Line Orders which set out the line of the proposed road, Side Road Orders relating to changes in access to or across the road, and Compulsory Purchase Orders in respect of the land which the Department of Transport needs to acquire to build the scheme. An Environmental Statement was also published to support these Draft Orders.
- o An Exhibition to explain and publicise the proposals was held on 9th and 10th November 1990 at St. Mary Magdalene Church Hall.
- o Supplementary Compulsory Purchase Orders were published in May 1991.

1.3.3 Since the publication of the Draft Orders in October 1990, the environmental impact has been re-assessed to take account of revised forecasts and additional information now available. This updated Environmental Statement has now been published, which necessitates the Draft Orders to be republished under the Highways Act.

1.3.4 The Environmental Statement will be placed on deposit with the Draft Orders at a number of locations in order to ensure that all parties concerned are given an opportunity to express an opinion before further decisions are taken on the project. Comments can be made to the Department of Transport, London Docklands Division, 5th Floor North, South Quay Plaza II, 183 Marsh Wall, London E14 9SH, before 7 January 1993. Unwithdrawn objections made to the previous draft orders will remain valid.

1.3.5 Only after carefully considering all objections and representations, after full consideration of an Inspector's Report and recommendations following any public enquiry, will the Secretaries of State for the Environment and Transport decide whether the Orders should be made, with or without modifications, or be abandoned.

SECTION 2

EXISTING ENVIRONMENT

2.0 EXISTING ENVIRONMENT

2.1 Description of the Site

2.1.1 The scheme area is within the boundary of the London Borough of Newham. The A13 forms the boundary between the districts of East Ham to the north and Beckton to the south (Figure 2.1). The responsibility for planning in Beckton is split between the London Borough of Newham and the London Docklands Development Corporation.

2.1.2 The existing A13 (Figure 2.2) within the proposed improvement area is kerbed dual three lane carriageway with a one-way two-lane temporary flyover taking the eastbound traffic over the junction with the A117. The westbound through traffic has to negotiate the signal controlled A117 junction at ground level. Footways, cycleways and verges exist on both sides of the trunk road.

2.1.3 The A117 provides access to East Ham and the Docklands area through the signal controlled junction at the A13. It is a single carriageway road with footways on either side and is a primary route linking with the Woolwich Ferry. To the north of the A13, the A117 is known as High Street South and to the south it is known as Woolwich Manor Way. On the A117, within the scheme area, the main junctions are Roman Road and Lonsdale Avenue on High Street South and Alpine Way on Woolwich Manor Way.

2.1.4 Roman Road is a single carriageway access road serving residential properties and also leads to Brampton Manor Secondary School and Roman Road Junior School, and has its junction with High Street South close to the A13/A117 junction. The left turn from the A13 eastbound exit slip road into Roman Road, even for a car, requires a very difficult manoeuvre. The right turn movement from Roman Road is prohibited due to its proximity to the junction.

2.1.5 To the south of the A13, Alpine Way which connects into Woolwich Manor Way provides access to several major retail outlets and other industrial units.

2.1.6 To the western end of the scheme, Noel Road provides access onto the A13 for the houses to the north-west of the junction. Only southbound access is permitted.

2.1.7 There are no specific pedestrian or cyclist facilities provided at the junction. Footways and cycletracks are currently provided on both the north and south sides of the A13. The cycletrack and the footway on the south side are segregated facilities of 2.5 and 2.0 metre widths respectively. To the north-west of the A13/A117 junction the cycletrack facility is currently used by residents for parking. To the north-east of the A13/A117 junction a shared cycletrack/pedestrian facility has been provided.

2.1.8 Footbridges are provided at the western end near Noel Road and the eastern end near Gooseley Lane to facilitate crossing of the A13.

2.1.9 All roads within the scheme area are presently lit. Standard lighting columns are sited in the central reserve and/or verges.

2.2 Local Road Network and Traffic

2.2.1 The A13 Newham Way forms the primary east-west route through the London Borough of Newham (Figure 2.3), providing an important link to the east for East London and Docklands. The road provides access to the M25 and the industrial and residential areas that are located along the northern bank of the Thames estuary.

2.2.2 The River Lea forms a barrier to east-west movement. It is crossed by the A11 (Stratford High Street), the A13 (at Ironbridge) and the Lower Lea Crossing (which opened in late 1991 to link the Royal Docks and the Isle of Dogs). The A13 is subject to heavy volumes of tidal through traffic, with two-way flows of about 70,000 vehicles each day. About one-fifth of this traffic is heavy goods vehicles.

2.2.3 The A406 South Woodford to Barking Relief Road (SWBRR), which was opened in late 1987, forms part of the North Circular Road. This role was previously performed by the A117, but despite the opening of SWBRR, the A117 remains a busy road. High Street South, to the north of the A13, provides access to East Ham. Woolwich Manor Way, to the south of the A13, provides access to Beckton and the redevelopment area around the former Royal Docks. Flows on the A117 are about 15,000 vehicles per day to the north of the A13 and 14,000 vehicles per day to the south of the A13.

2.2.4 The existing traffic flows through the A13/A117 junction during peak weekday periods, as recorded in 1991, are shown in Figure 2.4. The observed delays to vehicles at the junction are shown in Table 2.1 below.

APPROACH TO JUNCTION	MORNING PEAK (Sec/Vehicle)	EVENING PEAK (Sec/Vehicle)
A13 Westbound (ahead and right turn)	255	60
A13 Westbound (left turn)	245	55
A117 Northbound (all turns)	85	75
A13 Eastbound (all turns) (*)	85	80
A117 Southbound (all turns)	80	300

(*) Excludes flyover traffic

TABLE 2.1: OBSERVED DELAYS AT THE A13/A117 JUNCTION

2.2.5 As expected, the major direction of flow during the morning peak is westbound towards Central London. Traffic counts indicate that up to 2,700 vehicles per hour approach the junction on the A13 from the east. As traffic demand frequently exceeds the capacity of the road, long queues occur to the east of the junction, with many vehicles being delayed for two or more complete cycles of the traffic signals (Figure 2.5).

2.2.6 During the evening peak, the major flow is eastbound, with about 3,150 vehicles per hour approaching the junction on the A13 from the west. Although most of this traffic uses the existing (eastbound only) flyover across the A117, delays and queues occur on the A117 southbound approach to the signals, with many of these motorists being delayed for two or more cycles of the signals.

2.3 History of the Area

2.3.1 The area within the London Borough of Newham (established in 1965) has a long history of human settlement, with pre-Roman farms on the well-drained gravels north of the Thames marshes.

2.3.2 Evidence of Roman occupation is sparse, but remains of an important cemetery in the Roman Road area were discovered during the construction of the Northern Outfall Sewer. A Roman road is also believed to have run along a similar alignment to the current A117, from the Thames to the northern forests existing at that time.

2.3.3 Noted in Doomesday Book, East Ham was already an established hamlet with arable land and woodland. The present East Ham parish church of St. Mary Magdalene, a Grade 1 Listed Building, dates from the 12th century, with Saxon origins. The tower was added in the 16th century. It is the only unaltered Norman church in London, and has an adjacent, large, ancient churchyard.

2.3.4 Until the 19th century, the land use in East Ham changed little, with arable land in the north, and grazing on the marshes, which were subject to flooding. Marsh reclamation started in the 16th century. The main roads still followed the Roman lines, especially along the present A117 route. During the 19th century, many industries located in the area, and the large docks to the south were opened. This led to the first major development in the area, as East Ham became part of suburban London, with the old village centre expanding with new trades and services, as one of the fastest growing towns in Britain.

2.3.5 The Northern Outfall Sewer, first completed in 1865 and expanded in 1903, flows eastward across the A13/A117 junction to the modern Beckton Wastewater Treatment Works.

2.3.6 Most of the area north of the A13 in East Ham has been developed over the last century for predominantly two storey housing, with an associated infrastructure of roads, public open spaces and schools.

2.3.7 North west of the A117, the housing developments date primarily from the early 1900s, with the initial council dwellings constructed for the workers attracted to the developing area. Substantial areas of infilling were subsequently added in the 1950/60s and 1980s, in the Roman Road Housing Area, some to replace property lost in the Blitz.

2.3.8 There was little housing development between the World Wars, although Masefield Gardens Housing Estate, east of the churchyard, dates predominantly from the 1930s. Newham Way (the A13) was opened in 1928, along the old boundary between the higher land of the original hamlet and the marshy area, linking the City of London with the coastal towns of Essex.

2.3.9 Recent developments have mainly been south of the A13 in Beckton, for the London Docklands Development Corporation. This former marshland has been transformed over the last decade into an expanding new community, with substantial residential, recreational, retail and industrial developments. Residential developments, mainly west of the A117 are in a variety of styles, from two to four storeys in height.

2.4 Land Use and Planning Policy

Existing Land Use

2.4.1 The existing land use situation is shown on Figure 2.6. Over the years much of the area has been developed for housing, industry and recreational facilities, with extensive areas retained as open space.

2.4.2 In the north-west of the area, residential areas predominate.

2.4.3 To the south-west of the A13/A117 junction there is a mixture of land uses, including an industrial estate, a nursery, residential areas, a school, a golf driving range and allotments.

2.4.4 To the north-east of the junction the land is mostly open space, including a churchyard and park, with the remaining areas part of a residential development and allotments.

2.4.5 The area to the south-east is also mainly open, although an industrial park has developed to the east of Beckton Alps, and there is a commercial vehicle park further east. The open land includes the Beckton Alps dry ski slope and extensive areas of grazing.

Land Use Planning Policy

2.4.6 The existing development plan framework for the scheme area is provided by the Greater London Development Plan, which was adopted in 1976, the East Ham Local Plan (1985) and the Beckton Local Plan (1980). The scheme as it was developed originally was within the context of these local plans. Since the publication of some of these documents, there have been many changes in the local land use situation, not least the designation of the area to the south of the A13 as part of the London Docklands Development Corporation area. This has brought about considerable new development pressures, and the need for revised planning policies for the area.

2.4.7 In this context, the London Borough of Newham published a Consultation Draft of their Unitary Development Plan (UDP) in November 1991, which includes the London Docklands Development Corporation area. The comments received on this draft are currently being assessed, and a formal version of the UDP is expected in autumn 1992. A local inquiry into the UDP is likely in summer 1993, with the UDP being adopted by Newham in late 1993. The UDP will then replace the existing Beckton development plan framework for the area. Although the various UDP statements and policies have not finally been approved, and may be subject to modification, they do provide the most relevant and recent land use planning policy context for the area.

2.4.8 The proposed A13 improvements are supported by a range of strategic statements, objectives and polices in the draft UDP as indicated in Figure 2.7. In particular, the function of the road in providing improved connection to the national road network is expected to facilitate the regeneration of the East London economy, in conjunction with the redevelopment of extensive areas of derelict, vacant and under-utilised land.

Borough Overview

2.4.9 Newham has over 360 hectares that could become available for development in the next decade, more than any other London borough, while occupying a key position in east London. The combination of its location (relative to the national road and rail network, and the availability of development sites) will enable it to play a major role in the regeneration of the East London economy, as recognised in the draft UDP.

2.4.10 To exploit this potential, the draft UDP recognises the need for major improvements to the borough's communications network. A key element of this is the improvement of Newham Way, the A13, which is identified as a Phase I project within the development strategy for Newham 1992-2002. The priority given to the A13 improvements reflects the advice in the Strategic Planning Guidance for London.

2.4.11 The strategic planning objectives of the London Docklands Development Corporation also include the requirement to improve road access into and within the Docklands Urban Development Area. Their overall strategy recognises that communications are the key to successful regeneration of the area. This involves putting in place a strategic road network linking the area to the national motorway network.

Environmental Strategic Policies

2.4.12 Newham Council's concern is to create a "good environment" and it has defined a range of objectives in the draft UDP which it will pursue to improve the quality of life in the borough. To achieve these objectives, key policies are defined. Of particular relevance to the proposed A13 improvements are that:

- New transport schemes will be required to include measures to eliminate damage to the local environment, major new schemes should include an assessment of environmental impact.
- All development occurring close to transport facilities will include works and/or design features to minimise loss of amenity to potential occupants.

Transport Strategic Policies

2.4.13 Newham Council recognises that much of the existing road network within the borough is incapable of handling modern traffic flows. Congestion is common, especially on main roads. There is also the need to reduce the number and severity of road accidents. Transport objectives have been defined in support of projects which contribute to economic growth whilst also minimising environmental impact. Of most significance in relation to the A13 improvements is that "new major road building will only be allowed where necessary to achieve economic regeneration and/or environmental improvements". This has been recently emphasised in the national priority given to the improvements of the A13 by the Government. The draft UDP also includes policies to enhance the transport system through the improvement of conditions for pedestrians and cyclists and the promotion of community safety.

2.4.14 The draft UDP makes recommendations on policy implementation. A corporate strategy, for managing development in the borough to ensure that benefits are maximised and priority needs are met, includes Newham's intention to "promote transport investment that will link with development sites and maximise their development potential". This is of relevance to the A13 improvements.

Environmental Policies

2.4.15 There are a number of specific environmental proposals and policies in the draft UDP which affect the proposed A13/A117 junction improvement area, as shown on Figure 2.7. These are discussed below.

2.4.16 There are four areas of "Open Space" identified in the UDP which adjoin the scheme, from west to east:

- Beckton District Park

  At the western end of the scheme, Beckton District Park is designated in the draft UDP as Open Space to be protected. It is also noted as a proposed Protected Site of Nature Conservation Importance (NCI), where development would not be allowed, and conservation and improvement are encouraged. The park is additionally designated an area of Metropolitan Open Land, to be retained and enhanced, in conjunction with provision for the playing fields. Such areas are important to the physical structure and character of north-east London, providing breaks in the built-up area.

- St. Mary Magdalene Churchyard

  This site is located north-east of the A13/A117 junction. The draft UDP proposes to designate the area as Open Space to be protected, as an NCI and as a Local Nature Reserve, (see sections 2.6.3-5).

- Beckton Alps

  Located south-east of the A13/A117 junction, this area is designated in the draft UDP as Open Space to be protected, and an NCI which will preclude development.

- Gooseley's Playing Fields

  This site adjoins the north-east extent of the scheme and is designated in the draft UDP as Open Space to be protected, and as Metropolitan Open Land. It is also protected under provisions for playing fields.

2.4.17 The draft UDP aims to establish a "Green Chain" recreational resource along the route of the Northern Outfall Sewer, which crosses the A13/A117 junction.

Other Policies

2.4.18 The UDP also includes provisions for the protection of trees, vacant land and archaeological remains, as appropriate.

Allotments

2.4.19 To the south-west of the A13/A117 junction there are allotments north of the sports ground, and allocated as such in the draft UDP. Such allotments are generally protected, with no planning permission for developments normally being granted without appropriate replacement. These allotments are owned by London Docklands Development Corporation. The other allotments at the north-east of the

scheme area by Gooseley Lane are not designated as such in the draft UDP, rather as Metropolitan Open Land. Discussions have been held with Newham Borough Council, the Social Services Allotment Association and London Docklands Development Corporation regarding ownership and status of relevant allotments, none of which are understood to be statutory.

Housing policies

2.4.20 The draft UDP promotes the phased development of new residential developments to meet strategic guidance targets concurrent with social and physical infrastructure provision. In accordance with this Policy, a large area of land is proposed for development of around 500 dwellings to the east of Beckton District Park, south of the A13.

Transport Policies

2.4.21 The draft UDP proposes the establishment of a network of walks across the borough, which will be part of the London Walking Forum's Metropolitan Walks, including one along the Northern Outfall Sewer. There is currently access to a walk along the embankment north-west, but no access south-east of the junction. A similar policy concerns a cycling network, of which the A13 is proposed as a component. There are already cycling and footpath facilities both sides of the A13, and a cycle way is proposed along the route of the Northern Outfall Sewer.

2.4.22 Traffic management issues are covered in the draft UDP, with specific reference to the need for improvements to the A13.

Employment Policies

2.4.23 The draft UDP proposes to designate a large area of land south-east of the A13/A117 junction as a Principal Employment Area. There would be encouragement of the retention and expansion of employment activities within the business, general industrial and warehousing use classes.

2.5 Townscape and Visual Appraisal

Townscape Appraisal

2.5.1 The townscape quality of this urban edge environment is generally poor and is dominated by the existing roads and A13/A117 junction in particular. The intense traffic is at present not screened and the present flyover is an unappealing structure (Figure 2.8). The impact of the road may have contributed to the housing and commercial retail development adjacent to the road having become rather run-down and in need for improvements, particularly to the north-west of the junction from Noel Road east and the residential properties of Masefield Gardens to the north-east of the junction.

2.5.2 The appraisal seeks to identify the elements of the townscape of the study area which forms its character. This section considers:

- o areas of townscape value, including buildings of architectural interest and open space of landscape quality;
- o significant landscape features including significant trees;
- o pedestrian links;
- o significant views from particularly accessible points; and
- o townscape features including hard, soft and broken edges and landscape detractors.

2.5.3 Areas of townscape value are defined as those with buildings of good architectural appearance and open space of good landscape appearance. The study area includes few buildings of good appearance and architectural interest. However, ST. Mary Magdalene's Church, a listed building, and the cemetery, a nature reserve, is of significant value to the area.

2.5.4 The residential communities of Roman Road, north of the A13, provide only a minor contribution on the townscape value of the area due to their inconsistent architectural features. The properties on Newham Way have a notably degraded appearance. The gardens of the Roman Road properties provide the only softening element to adjacent hard edges, pavements and fences associated with this built environment and adjacent commercial land-uses fronting the A13. The residential properties of Masefield Gardens, to the north-east of the junction, are of only a slight value to the character of the area due to their inconsistent architecture and appearance.

2.5.5 To the south of the A13 the character of the townscape is dominated by open space and new residential development. In the south-east the open grazing land is seemingly poorly managed and untidy. Of more note, however, are the Beckton Alps, a dramatic and artificial landform which creates a considerable landmark, and the new housing in the south-west, which although much of which is architecturally undistinguished, is reasonably attractive. Because so much of this area is in the process of redevelopment the contribution of elements including residential properties, pedestrian amenities, traffic circulation, and hard and soft landscapes associated with new public open space, the townscape character of this area is difficult to establish. As a result of the style of this new development, the townscape character on both sides of the A13 will always be sharply contrasted.

2.5.6 To the west of the new North Beckton Housing Development is the well-established Statutory Public Open Space of Beckton Park. Adjacent to the A13 and raised above the existing road grade, it provides a valuable townscape element and significant landscape feature.

2.5.7 The commercial property surrounded by Beckton Park, detracts from the park's setting despite landscape ameliorative efforts to buffer it. A pocket of vacant and

untidy land adjacent to the Noel Road footbridge is currently unutilised, and provides a valuable informal north-south link across the A13 to the Roman Road area.

2.5.8 Physical and visual links from one area to the next contribute to the character of an urban locality. The busy dual three-lane corridor of the A13 severs the area in two, whilst the Northern Outfall Sewer and its associated embankments creates a second division in the south-east. The pedestrian severance created by the A13 is reduced by two pedestrian footbridges at Noel Road and Gooseley Lane. The Noel Road footbridge is, however, only informally connected to both Beckton Park and the new residential properties south of the A13.

2.5.9 The Gooseley Lane footbridge, currently under-utilised, remains a potential link to proposed commercial/industrial development south of the A13, but currently only serves as pedestrian access to the bus stops for the eastbound carriageway of the A13.

2.5.10 Designated footpaths and cyclepaths do exist along the A13, however, there is no physical separation for the pedestrian from the harsh environment of the road. Paths along the A13 provide access to Gooseley Park, the Beckton Alps, the A117 and Noel Road.

2.5.11 Occasional mature trees do help to soften the otherwise hard, urban nature of the roads and adjacent housing, though they provide little in the way of effective screening. The most significant of these are the eighteen Lombardy poplars (Populus nigra "Italica") forming a frame for the East Ham Industrial Estate, two Norway maple (Acer platanoides) by the Noel Road footbridge, and two limes (Tilia euchlora) and two poplars (Populus nigra) on the A117 by the driving range. In addition there are large areas of young planting that in time will make a significant contribution to improving the landscape quality of the area; these are the Beckton Park plantings, the planting on the embankment to the south of St. Mary Magdalene's Churchyard, the Scot's Pine plantation within the churchyard and the planting on and around the Beckton Alps.

2.5.12 With the exception of the public open spaces interspersed within the study area, including the focal point of the Beckton Alps, the study area lacks any townscape landmarks. The areas of townscape value are few, but include St. Mary Magdalene's Church, Beckton Park, Gooseley's Playing Fields and the new housing developments south of the A13.

Visual Appraisal

2.5.13 The present A13 and its junction with the A117 have considerable visual impact on the surrounding residential areas. Both are almost without any form of effective landscape screening, the only notable exceptions being the 2 metre high planted mound to the north-east of the nursery (this provides a partial screen for the new housing in the south), the belt of trees along the southern edge of Gooseley's Playing Fields (though this is somewhat sparse in places and allows views of the

traffic under the canopies of trees) and the mature trees in the northern part of St. Mary Magdalene's Churchyard.

2.5.14 The residential areas most visually affected by the road and junction are those at the Roman Road Housing Area immediately adjacent to the A13 and the smaller group of houses at the Masefield Gardens Housing Estates. These properties are very severely affected at present, due to the lack of screening. The existing flyover causes visual obstruction for many of the properties in these areas. The structure is approximately 300 metres in length and has a maximum height of 8.3 metres above the existing carriageway. There are no visual or noise barriers to help screen traffic whilst on the flyover.

2.5.15 In addition to the adjacent properties that have views of the road and junction, there are also those with significant, if more distant, views. The new housing areas to the south-west have views across flat open space or flat open land scheduled for further development. These views are partially screened by intermediate structures (such as the Nursery) or minor landscape screens (such as the mound previously described). However, these new housing areas can only be described as incurring moderate visual impact. In addition to this housing, the residential properties surrounding Gooseley's Playing Fields and St. Mary Magdalene's Churchyard have views across these open spaces.

2.5.16 The A13 is illuminated throughout the junction and the flyover has additional lighting on taller columns to illuminate the carriageway. This means that at night-time the illuminated junction creates a severe visual impact. Those properties adjacent to the junction are directly affected with some loss of privacy.

2.6 Ecological Appraisal

2.6.1 This section summarises the findings of the ecological field surveys undertaken as part of this Environmental Assessment. The detailed appraisal is given in Section 1 of Volume II of this Environmental Statement.

2.6.2 Potentially interesting ecological sites in the area have been investigated by the London Ecology Unit (LEU). However, none were considered to be of more than local interest, as confirmed by the subsequent fieldwork. Newham Borough lacks woodland, and efforts are being made to redress this with planting in East Ham Nature Reserve, on the slopes of Beckton Alps and elsewhere. Figure 2.9 indicates the ecological interest in the area, which is discussed below. The London Wildlife Trust has no sites in Newham, nor are there any LEU Sites of Metropolitan Importance for Nature Conservation. There are Sites of Borough Importance, both of Grade I and II status, and a Green Corridor that could be affected by the proposed scheme, but no Sites of Local Importance.

2.6.3 Of greatest ecological value is East Ham Nature Reserve in the churchyard at St. Mary Magdalene church, a Grade I Site of Borough Nature Conservation Importance, and proposed for designation as a Local Nature Reserve. Although

botanically unexceptional, the diversity of the vegetation in this relatively urban area has developed with a lack of disturbance over centuries, and now includes some interesting and locally scarce plants. The southern part of the reserve is relatively recent secondary rank grassland. It is dominated by Common Couch-Grass and False Oat-Grass, with tall herb species and scattered shrubs and trees.

2.6.4 Reserve management practices have been aimed at controlling Sycamore growth and enhancing the plant species diversity. The area supports a varied invertebrate fauna. Of particular note in a national and local context are Roesel's bush-cricket, lacewing flies and a variety of butterfly and moth species. The reserve is also used by breeding birds, and provides food sources for winter migrants, while being used by various reptiles and mammals.

2.6.5 The interpretive centre and reserve are well used, with school classes visiting on most weekdays in term time, in addition to the general public and various holiday activities.

2.6.6 The grazing and waste ground in the area supports a limited range of species. The most interesting features in nature conservation terms are the ditches and small areas of standing water, although the general diversity of coarse grassland and ruderal species enhances the value of these areas in supporting invertebrate and bird populations. Fly-tipping may have contaminated some areas, but this does not appear to have been seriously detrimental to the vegetation.

2.6.7 Beckton Alps is predominantly grassland, with some plantings of native trees and shrubs, supporting a variety of breeding and migrant bird species. These plantings are currently being extended on the northern slopes. The area is a Grade II Site of Borough Nature Importance, designated for the species found on its upper slopes, which are rare in London.

2.6.8 The Northern Outfall Sewer is also a Grade II Site of Borough Nature Conservation Importance. It consists of grassland, with natural colonisation by scrub species on the embankment slopes. It is of ecological significance as a green corridor, linking isolated areas of nature conservation interest in an otherwise predominantly built-up environment, with the noted presence of reptiles and of attraction to migrating birds.

2.6.9 Planting along the A13, especially on embankments, provides screening, softens the visual appearance of the area and also enhances the ecological conservation value of more extensive adjacent open spaces. Some such planting is mature, including the Lombardy Poplars facing East Ham Industrial Estate, the Norway Maples by the Noel Road footbridge, and the limes and poplars on the western side of the A117 by the driving range.

2.6.10 More recent improvements to the landscape quality of the area have been provided by amenity planting in Beckton District Park, at the churchyard, and on the embankment along the A13 to the west of the junction. Beckton District Park itself is part of a Grade I Site of Borough Nature Conservation Importance, designated

for the extent of its semi-natural wetland and scrub habitat, and incorporating roughland south of the A13. An additional Grade I Site is the Beckton Vacant Land area of marshy grassland and ditches, valuable for birds because of its open and undeveloped character, and contiguity with the River Roding migration route. This site includes the embankment south of the A13 to the east of the junction, with tall herb communities, coarse grasses and scrub, all common species ubiquitous on naturally colonised urban land.

2.6.11 The central reservation of the A13 supports common plant species along certain lengths, of no significant ecological interest. Other minor open spaces and paths are also of no ecological importance, planted or colonised by common species or garden escapes.

2.6.12 Eighteen Lombardy Poplars are included under a Tree Preservation Order (TPO) (1989) to the north and east of the East Ham Industrial Estate. No other trees covered by TPOs have been noted in the scheme area.

2.6.13 Allotments are also of ecological interest, paths and untended areas supporting a wide range of species.

2.7 Archaeological and Architectural Appraisal

2.7.1 The protection of heritage sites is a material consideration to the Environmental Statement. Figure 2.10 indicates areas of known and potential archaeological interest.

Archaeology

2.7.2 Observations and chance finds during previous construction work near the A13/A117 junction have indicated prehistoric, Roman and medieval activity in the area. There are many anticipated aspects of archaeological interest in the area which may have serious implications on the scheme as discussed in Section 5.3.12 and 5.3.13. Borehole evidence shows underlying peat deposits, which may hold archaeological remains.

2.7.3 Extensive Roman finds have been made in the churchyard at St. Mary Magdalene and in the Roman/Saxon road area, including burial remains. The A117 probably follows the line of a Roman road from the Thames estuary to the main Roman road east out of London. It is also possible that another Roman road skirted the northern edge of the marshes, near the modern Tollgate Road.

2.7.4 Norman and medieval occupation in the area was centred in the area of St. Mary Magdalene. As well as being of ecological interest, this is one of Britain's oldest and largest remaining cemeteries, notably used for plague victims.

Architecture

2.7.5 A grade I Listed Building, St. Mary Magdalene church is one of very few relatively unaltered Norman churches in London. The main structure dates from 1130, Roman bricks being used in its construction alongside Norman pudding stone. The upper part of the tower dates from the 16th century.

2.7.6 There are no other buildings of known architectural interest in the immediate vicinity of the A13/A117 junction, either listed or of local interest.

2.8 Geology And Drainage

Geology

2.8.1 Ground investigations (boreholes and trial pits) were undertaken for the proposed scheme which determined the materials beneath the area of interest. The general geological strata of this site (from surface) is made ground, alluvial clay, flood plain gravel layers, London Clay and Woolwich and Reading Beds.

2.8.2 The made ground generally comprises of variable clays of differing consistency, ash, gravel, slag clinker and building rubble with some organic materials. In the thicker surface areas close to the A13/A117 junction and the Northern Outfall Sewer (where materials reach up to 6.80 m), the made ground is predominantly granular in nature with cobble and boulder size fragments of slag and concrete.

2.8.3 Alluvial deposits to the west of the Northern Outfall sewer comprise silty clays and up to 3.90 m of peat. To the east they are primarily silty and sandy clays. Throughout the scheme area the alluvial clays are organic in nature and contain pockets, lenses and bands of peat.

2.8.4 The flood plain gravels vary across the site generally from very gravelly sand through sand and gravel to sandy gravel but may typically be described as sandy and very sandy fine to coarse, angular to rounded gravel with occasional cobbles.

2.8.5 The London Clay is typically a firm to stiff strata, becoming stiff and very stiff brownish grey fissured silty clay with fine sand partings. It is sometimes described as laminated, locally sandy and with silt laminations. At its boundary with the underlying Woolwich and Reading Beds its form is noticeably more shelly.

2.8.6 The Woolwich and Reading Beds is a variable deposit of predominantly stiff and very stiff grey sandy silty clays. It is a dense and very dense variable granular deposit. From the ground investigations, an apparently continuous limestone band of approximately 0.4 m thickness was encountered between 8.5 m to 9.15 m into the beds. The maximum penetration of these beds was 19.45 m.

2.8.7 There are no aggregate workings in the vicinity.

Drainage

2.8.8 Groundwater is generally encountered within the Flood Plain Gravel at depths of between 3.70 m and 8.0 m below ground level stabilising at depths of between 2.80 m and 5.80 m below ground level. Ground water was also encountered under sub-artesian head within the granular strata of the Woolwich and Reading Beds at depths of between 15.40 m and 21.15 m below ground level generally rising to between 6.32 m and 9.90 m below ground level.

2.8.9 The existing surface water drainage system for the A13 carriageway predominantly discharges into land drain ditches to the south of the A13. Some positive drainage system is provided in the vicinity of Noel Road and Masefield Gardens which discharges in the existing 1.8/2.1 metre diameter sewer.

2.9 Air Quality

2.9.1 The traffic on the A13 and A117 causes a deterioration in local air quality, particularly at the junction between the two roads, where queues of slow-moving traffic form, especially at peak hours. This slow-moving traffic produces more pollutants (except for Nitrogen Oxide emissions) than traffic moving in free flow conditions, resulting in poor air quality.

2.9.2 Motor vehicles produce a variety of components classified as pollutants. The most important of these in terms of a local air quality assessment include:-

carbon monoxide;
oxides of nitrogen;
hydrocarbons;
particulates; and
lead;

2.9.3 Carbon monoxide is usually taken as the general indicator of road traffic pollution. Other pollutants such as smoke and polyaromataic hydrocarbons are associated particularly with diesel emissions. The pollutants directly emitted by motor vehicles can also lead to the formation of secondary pollutants such as ozone and photochemical smog. The individual or cumulative effects of atmospheric pollution can cause adverse impacts if present in sufficiently high concentrations either as a nuisance or as a potential health hazard.

Carbon dioxide is also produced by motor vehicles and whilst not important as a roadside pollutant has a significant role in the so called "greenhouse effect".

2.9.4 There are national air quality standards in the UK introduced to protect human health. For pollutants associated with motor vehicles the relevant standards are as follows:-

- o a recommended annual mean lead concentration of 2 microgrammes per cubic metre (2 μgm^{-3}) in locations where humans may be exposed for long periods;
- o a limit value of 200 μgm^{-3} for nitrogen dioxide, for 98% of mean hourly values; and
- o a limit value of 250 μgm^{-3} for total suspended particulates, expressed as a 98th percentile of daily mean values.

The Department of Transport's Manual of Environmental Appraisal defines an air quality problem as exposure, more than once a year, to a concentration of carbon monoxide exceeding 9 ppm for eight hours, or 35 ppm for one hour.

2.9.5 A comprehensive air quality assessment for the A13/A117 junction improvement scheme has been undertaken and the details are given in Section 2 of Volume II of this Environmental Statement. This has been based on a computer modelling technique and on-site air quality monitoring.

Monitoring Programme

2.9.6 Two monitoring stations were established in the area of the scheme, one on the north side of the A13 close to the A117 junction in Roman Road and a second near the Noel Road/A13 junction. These sites were chosen to establish existing background air quality around the junction and close to the road where the traffic is free flowing.

2.9.7 Monitoring was undertaken for three months. Results are included in Section 2 of Volume II. This enabled a minimum period to provide an adequate data base to allow for pollution variations with traffic and meteorological conditions.

2.9.8 Carbon monoxide was monitored continuously and weekly average concentrations of lead, nitrogen dioxide and total suspended particulates were monitored throughout the monitoring period. The specialist report accompanying this Environmental Statement includes results of the monitoring. The results of the monitoring showed that the 9 ppm Manual of Environmental Appraisal criterion is exceeded at the junction site.

2.9.9 The monitoring program was supplemented by modelling. The results for the existing situation are given in Figure 2.11 for carbon monoxide. This shows the annual maximum 8 hour average concentrations for the scheme area as a contour plot, indicating the highest concentrations of carbon monoxide are around the A13/A117 junction but are at present below the 9 ppm criterion. The results for lead showed that the concentrations are substantially below the UK standards.

2.9.10 The monitoring and modelling studies show that the area is subject to widespread effects of vehicle related pollutants. The results of the two studies give similar results although the monitored values are slightly higher. This indicates an additional contribution from other sources in the area. The main assessment of potential impacts has been based on a comparison of the proposed scheme with the existing situation. The background effects would exist in both cases, therefore the main emphasis of the assessment has been based on pollutants arising from the roads. A nominal background contribution has been added to the modelling results.

2.10 Existing Noise Levels

2.10.1 The existing noise levels (1991) for the scheme were calculated in accordance with "Calculation of Road Traffic Noise" - 1988 edition as recommended by the Department of Transport's Manual of Environmental Appraisal.

2.10.2 The results showed a wide variation in noise levels within the scheme area ranging from 85 dB(A) for properties fronting the A13 to 55 dB(A) for properties that are further away.

2.10.3 To the north east of the junction the existing noise levels of properties adjacent to the A13 are approximately 82 dB(A), with around 65 dB(A) for the properties within Hameway and for properties to the north of Gooseley's playing fields.

2.10.4 To the south-west of the junction the existing noise levels of properties fronting the A13 are around 80 dB(A) and noise levels further away reducing to approximately 55 dB(A).

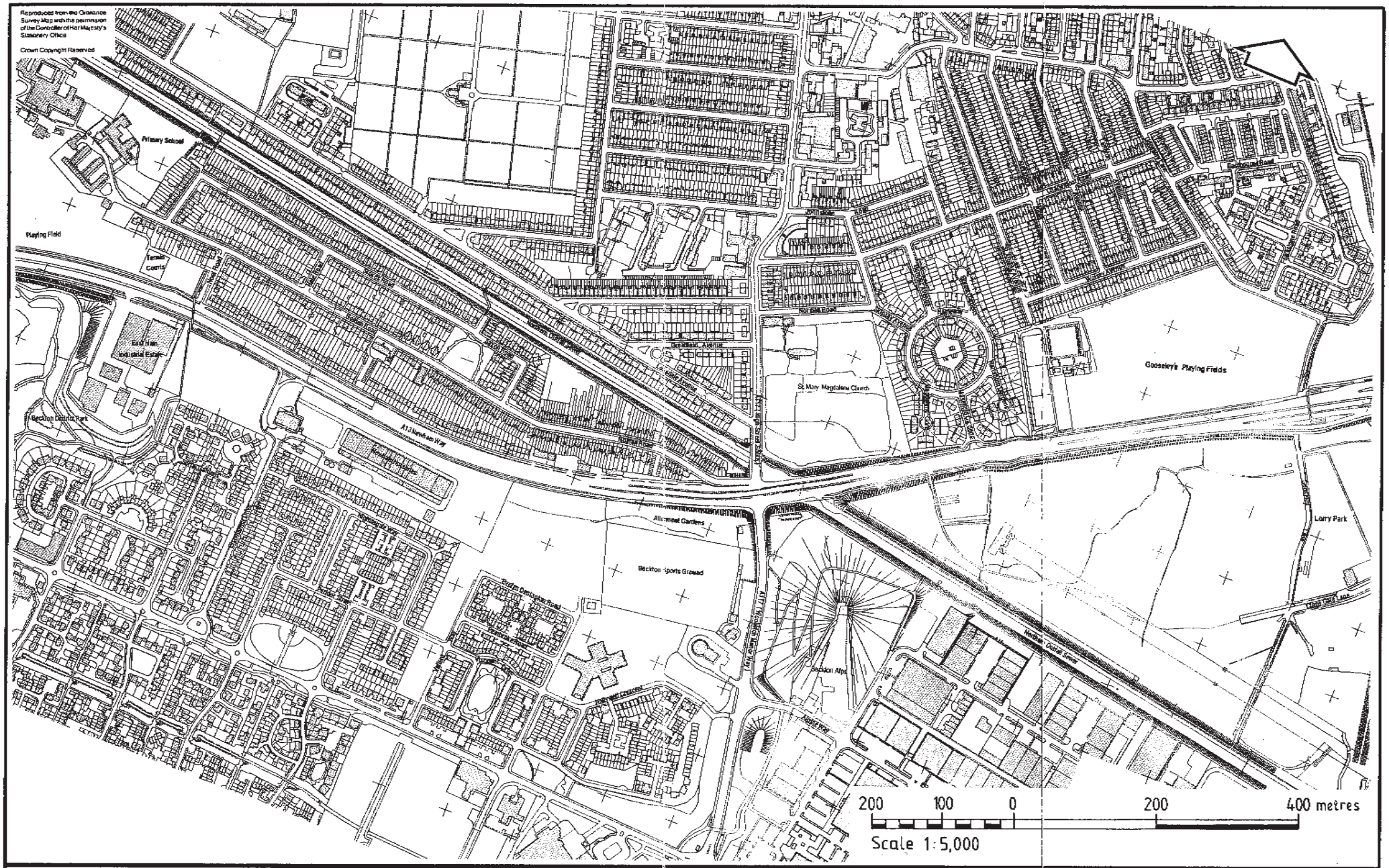
2.10.5 The existing noise level to the north-west of the junction varies considerably from 85 dB(A) for properties adjacent to the carriageway to approximately 57 dB(A) for the northern properties along Roman Road. The existing noise levels for properties in the proximity of the A13/A117 Junction are around 77 dB(A).

2.10.6 The existing noise levels are illustrated in Fig. 4.9 together with the predicted level for the year 2012.

2.11 Vibrations

A study was undertaken to determine groundborne vibrations currently experienced adjacent to the A13, west of the A117. The study showed that the levels of vibrations are relatively high, caused by the poor condition of the existing road, heavy and high speed traffic and peaty ground conditions. However, the vibration levels are not high enough to cause structural damage to any of the properties.

The most sensitive structure in the vicinity of the proposed works is the Church of St. Mary Magdalene. The effects of vibrations to this building have also been assessed is discussed in Section 4.10 and the details given in the report in Section 4 of Volume II.



THE DEPARTMENT OF TRANSPORT

EXISTING SCHEME AREA

acer

FIGURE 2.2

TRAFFIC ON A117 (WOOLWICH MANOR WAY) VIEW LOOKING NORTH

WESTBOUND TRAFFIC ON A13

THE DEPARTMENT OF TRANSPORT

EXISTING JUNCTION

acer 7

FIGURE 2.5

THE DEPARTMENT OF TRANSPORT

PANORAMIC VIEW OF VIADUCT

acer 7

FIGURE 2.8

SECTION 3

DESCRIPTION OF SCHEME

3.0 DESCRIPTION OF SCHEME

3.1 Background

3.1.1 The A13 is one of the main radial routes in East London linking it to the M25. It has a vital role in the strategic road network serving Tilbury, Docklands and industrial developments on the northern side of the River Thames. The proposed scheme forms part of a programme of improvements which the Department of Transport proposes to undertake along the A13.

3.1.2 The A117 Woolwich Manor Way provides one of the accesses to the Royal Docks from the A13. The junction between the A13 and A117 is unsatisfactory, with current traffic demands resulting in congestion on the westbound A13 carriageway and the A117. With increasing development of the London Docklands the situation is expected to deteriorate with an associated worsening of the overall environment and an effect on the community.

3.1.3 An experimental scheme for the tidal flow operation of the existing temporary eastbound flyover was introduced between 1988 and 1989 but did not realise the anticipated benefits.

3.1.4 In April 1988 the Department of Transport commissioned a study into the improvement of the junction. A number of options were considered including at grade improvements while maintaining the existing flyover, duplicate flyover (together with at grade improvements), a new flyover and an underpass.

3.1.5 An at grade improvement retaining the existing flyover was rejected as it would be inadequate to cope with future traffic demands, particularly associated with the Docklands development. In addition, the vertical profile of the existing flyover is well below current design standards.

3.1.6 The duplicate flyover was rejected as this option has similar drawbacks to an at grade improvement, with the limited eastbound capacity. Additionally, due to the different standards for the new flyover, a longer structure of different vertical alignment to the existing would be required. This mismatch would have severe visual impacts.

3.1.7 The major constraints of the underpass option was crossing the Northern Outfall Sewer and twin sludge mains. These services (owned by Thames Water) are of strategic importance, particularly the Northern Outfall Sewer which carries an average daily flow of 200 million gallons. Thus if a major collapse of the Northern Outfall Sewer occurred as a consequence of constructing an underpass, the resulting flooding would be catastrophic. Thames Water requirements for this option was that the underpass should have a clearance of 3-4 metres without any settlement of their sewer. In view of this, the underpass would be deeper, longer and impractical to construct.

3.1.8 Following the initial assessment of the options the new flyover option was studied further. A Public Exhibition took place in October 1989 in which the new flyover scheme was presented. As a result of comments made at the time, modifications were made as follows:

- o the proposal to make Noel Road two way at its junction with the A13 was deleted and the present traffic arrangement has been retained;
- o the environmental barrier at Masefield gardens has been extended to Gooseley Lane; and
- o the environmental barrier on the north-west side has been extended further to the west by 25 metres.

3.1.9 Draft statutory orders were published in October 1990 and an Exhibition to explain and publicise the proposal was held in November 1990. Subsequently some objections were received on various issues including noise, pollution, vibrations and land take. The outstanding objections will remain valid.

3.2 The Proposed Scheme

3.2.1 The published scheme comprises a full grade separated interchange. The A13 through traffic would be carried over the A117 with the junction of the A117 and the slip roads onto and off the A13 would be traffic light controlled.

3.2.2 The proposed A13 improvement would commence from a point 260 metres west of Noel Road, pass to the south of the existing road, continue over the A117 and join the existing road again at Gooseley Lane (Figure 3.1). This new road would be approximately 2 km long, constructed as an "all purpose" dual three lane carriageways except between the eastbound slip roads from the A117 and those onto the A406 (South Woodford to Barking Relief Road) where the road would be dual four lane. The three and four lane carriageways would be 11 and 14.6 metres wide respectively, both with a central reserve of approximately 2.5 metres. The present speed limit of 50 mph would remain.

3.2.3 The route of the new road would be re-aligned southward up to 30 metres from the existing road. It would require land from the northern areas of East Ham Industrial Estate, the Beckton District Park, London Borough of Newham Nurseries, the golf driving range, grazing land and existing stables and allotments.

3.2.4 From west to east, the A13 would be at existing levels for approximately 850 metres, then rising onto a flyover 550 metres long over the A117, to rejoin the existing A13 at Masefield Gardens and would then continue for approximately 600 metres at existing levels to Gooseley Lane.

3.2.5 The A13 viaduct would be elevated to a peak of approximately 9 metres above the A117. The slip roads would be 7.3 metres wide. Those on the south would be

constructed on embankments of up to 5 metres high in order to pass over the Northern Outfall Sewer. The north-west and north-east slip roads would be of similar levels.

3.2.6 For the benefit of the houses fronting the A13 Newham Way in the north-west a landscaped buffer zone (varying from 3.5 to 9 metres) and service road (3.5 metres) would be provided between them and the new A13.

3.2.7 At Noel Road, at the western end of the proposed scheme, the existing footbridge would be modified to suit the new road arrangement. At the eastern end, the existing Gooseley Lane footbridge would be replaced. Both footbridges could be used by cyclists as well as pedestrians.

3.2.8 Throughout the proposed route there would be facilities for pedestrians and cyclists. On the southern side of the A13 it is proposed to provide a verge (2 metres), cycleway (2.5 metres) and a footway (2 metres). On the north-west of the junction, cyclists would use the new service road. To the north-east, segregated facilities for cyclists and pedestrians would be provided up to Masefield Gardens. To the east of this point would be a combined cyclist/pedestrian facility. The proposals for the junction would include provision of signal controlled cyclist and pedestrian crossings.

3.2.9 Bus lay-bys to replace the existing ones would be provided on the north-west slip road, on the south-east slip road just east of the Northern Outfall Sewer and just east of Masefield Gardens. The bus bay on the south side of Gooseley Lane would be modified to suit the new footbridge arrangements. The existing lay-bys near Noel Road footbridge are no longer required and therefore have not been incorporated in the proposed scheme.

3.2.10 The A117 would be widened to dual 11 metres carriageway to facilitate turning movement at the traffic signal controlled junction with the A13 slip roads.

3.2.11 The junction at Roman Road/A117 would be improved to provide a segregated right turn from the A117. The right turning movement from Roman Road would remain prohibited for safety and operational reasons. Traffic intending to turn right here would travel via Noel Road and the service road to arrive at the A13/A117 junction, where all movements will be permitted. The existing Noel Road would be retained in its present format, with only a southbound exit onto the A13 via the service road permitted. An access off the A13 would be provided to allow entry onto the new service road.

3.2.12 New lighting would be provided throughout the scheme. Separate amenity lighting would be provided for the service road and the pedestrian footpaths adjacent to the churchyard.

3.2.13 Environmental barriers would be provided as follows:

- a 3.5 m high barrier, on the north side, between Noel Road and the start of the proposed flyover;
- a 2 m high barrier, on the south side, between the East Ham Industrial Estate and a point opposite the beginning of the proposed flyover;
- a 2 m high barrier, on the north side, between the Masefield Gardens Housing Estate and Gooseley Lane; and
- 2 m high barriers on both sides of the flyover.

SECTION 4

EFFECTS OF SCHEME AND MITIGATION

4.0 EFFECTS OF SCHEME AND MITIGATION

4.1 Approach to the Assessment

4.1.1 In the following sections, the proposed A13/A117 junction improvement is assessed in terms of its long-term, permanent impact on the environment, once it is completed and in use. The scheme is considered in terms of its impact on a range of environmental aspects (such as existing roads, users, air quality and noise). Environmental benefits are appraised, as are secondary and cumulative impacts.

4.1.2 This section should be read in conjunction with Section 2, on the Existing Environmental situation in the area. The potential temporary, short-term impacts during the construction phase are considered in Section 5. Any residual effects of the scheme remaining after mitigation, and allowing for a period of fifteen years in which landscaping should achieve a reasonable degree of maturity, are discussed in Section 6.

4.2 Traffic, Cyclists and Pedestrians

4.2.1 A traffic model has been specially developed to assess the effects of the proposed trunk road improvements at both the A13/A117 and the A13/A112 junctions. (The latter is a separate improvement scheme currently proposed by the Department of Transport and does not form part of this assessment.) The model is based on extensive traffic surveys undertaken during 1989, supplemented in 1991 after the Eastern Gateway Access Road (EGAR) into the Royal Docks was opened. This model was also used to assess the benefits of the scheme as shown in the appraisal framework in Section 6 (Group 1).

4.2.2 The environmental effects of the scheme in 2012, 15 years after its planned opening, have been assessed. Forecast traffic flows in 2012 at the A13/A117 junction are shown in Figures 4.1 and 4.2. Figure 4.1 shows the flows if the proposed improvement is not carried out, and Figure 4.2 shows the flows if it is.

4.2.3 If the improvement scheme is not constructed, by 2012 the A13/A117 junction would present a major source of congestion and delay to traffic during the whole of the working day. This would encourage drivers to seek alternative routes, spreading congestion, delay and air pollution over a wide area.

4.2.4 It is forecast that in 2012 with the junction improved, some 7,800 vehicles per hour in the morning peak and 8,250 vehicles per hour in the evening peak would use the new two-way flyover. The total volume of traffic passing through the signal-controlled junction would be around 40 per cent less in the morning peak and 10 per cent less in the evening peak than would be expected without the scheme.

4.2.5 If the improvement is not constructed, the delays to traffic at the signal controlled junction will be much greater in 2012 than now. Delay and intimidation to pedestrians and cyclists crossing at the junction would be increased. With the improvement, conditions will be much better.

4.3 Land Use Interests

4.3.1 The primary effects of the proposed A13/A117 junction improvement would be general effects on land use interests (Figure 4.3) including:

- o a slight increase in the distance of the A13 from properties to the north of the road, and a slightly closer positioning of the A13 to properties south of this road;
- o development value issues, relating to a reduction in severance or poorer opportunities for proposed uses; and
- o possibilities for environmental enhancement.

4.3.2 The realignment of the A13 to the south would not be detrimental to the properties on the south side, since they are some distance away and will have screening. The properties to the north would have significant benefit, which will be achieved by provision of the landscape buffer zone and the environmental barrier.

4.3.3 The effects of the construction of the A13/A117 junction improvements on existing land uses would involve taking approximately 4.48ha of land. Of this:

- 0.07ha is used for industrial and commercial purposes;
- 0.07ha is Public Open Space;
- 3.48ha is vacant and grazing land;
- 0.19ha is recreational land; and
- 0.67ha is allotments.

4.3.4 Land take of areas used for industrial and commercial purposes will be minimal, and is not expected to affect these operations materially, although some car parking will be affected at the frontage of East Ham Industrial Estate. They can be mitigated by providing additional parking within the estate.

4.3.5 Land take of open and recreational land such as at Beckton Park and Beckton Alps would not affect their continued functions. The public open space taken from Beckton District Park and part of the vacant land east of the East Ham Industrial Estate is 0.07ha. Replacement land would be provided adjacent to Canning Town. The "Green Chain" recreational resource along the Northern Outfall Sewer is already severed at the road junction, and the proposed scheme will improve rather than prejudice the green chain, with the provision of safer pedestrian and cyclist crossing facilities.

4.3.6 The proposed scheme will involve few effects on the built environment, with only two buildings to be demolished, the electricity sub-station on the south-west corner of the A13/A117 junction and the stables south of the A13, opposite Masefield Gardens. Neither of these buildings are of heritage importance.

4.3.7 Land take will also involve the loss of the allotments immediately to the south-west of the junction.

4.3.8 In general terms, apart from the allotments, the impact of the proposed scheme on existing land uses will be small and the land take will not have a significant impact on the adjacent land uses.

4.4 Landscaping and Visual Effects

Effect on Townscape

The key effects of the proposed scheme on townscape are detailed below.

4.4.1 The alignment of the scheme to the south of its present alignment would impact on the Beckton Park open space west of the East Ham Industrial Estate, plus the Estate itself which had been proposed as a site for further development by the London Borough of Newham. Impact on the park would be limited to the loss of some planting only, but this would not substantially reduce the screening effect. The proposed scheme would require a strip of the northern part of the East Ham Industrial Estate and the open land to the east of up to 8 metres wide. There would be some loss of screening for this open land as the existing 1.5 metre bund would be lost, though even the replacement of this would not adequately protect those future housing areas from the impact of the A13.

4.4.2 The open land to the east of the Nursery is also proposed for residential development. The loss of the 2 metre high bund with its semi-mature planting would dramatically increase the visual impact of the road on any future development. A 2 metre high environmental barrier would be provided to help mitigate this effect.

4.4.3 The existing grazing land in the corner, formed by the A13 and Northern Outfall Sewer, is proposed for further stabling or even a riding centre. The proposed scheme would require a strip as much as 45 metres wide to be within the landtake.

4.4.4 Further to the east, the grazing land, designated for industrial and commercial use, would lose the existing 1.5 metre high screen bund.

4.4.5 The proposed scheme would not have an additional impact on the Churchyard.

4.4.6 The Metropolitan Open Land at Gooseley's Playing Fields would not be directly affected by the alignment.

4.4.7 The allotments to the immediate south-west of the junction would be within the landtake of the proposed scheme and the remaining parcel could not realistically continue as allotments. The allotments in the far eastern part of the study area would not be affected. These latter allotments have the status of Metropolitan Open Land.

4.4.8 The existing Lombardy Poplars would be lost along the frontage of the East Ham Industrial Estate.

4.4.9 Riding stables to the south-east of the junction would be lost, however, there would be no demolition of residential properties. An electrical sub-station would also be demolished adjacent to the present junction.

4.4.10 The Noel Road footbridge would require modification to suit the alignment of the new road.

4.4.11 The key effects of the proposed scheme on townscape would be, as detailed above, primarily associated with additional land required for the upgraded carriageway, the junction and its slip roads. The proposed scheme corridor would be significantly wider and the flyover structure significantly longer. However, in addition to the realignment of the A13, the integration of hard and soft landscape materials and pedestrian amenities, with a more attractive flyover structure, would reduce the adverse effects and make a positive contribution to the townscape of the scheme area.

Visual Intrusion

4.4.12 An assessment of visual intrusion of the proposed scheme has been carried out in accordance with the Department of Transport's "Manual of Environmental Appraisal" (MEA) as updated by the "Note on Current Practice" dated February 1988. The MEA's method of assessment of visual intrusion is concerned with establishing the extent to which the quality of view is down-graded and this down-grading can be determined as follows:

High: where the road would be considered to be the dominant intrusive element in the view.

Medium: where the road would be considered to be an important intrusive element in the view.

Low: where the road would be considered to be an intrusive element in the view.

4.4.13 The existing A13 and its junction with the A117 currently has an adverse visual effect on the adjacent housing and surrounding area. The re-alignment of the road away from the housing to the north and the ameliorative measures associated with the proposed scheme would considerably reduce the degree of this adverse effect. Therefore, it follows that the MEA methodology of assessing a down-grading of the quality of the view may not be appropriate in this case. Indeed, as is described

below, no residential properties would experience a down-grading in the quality of their view with this scheme. To determine the extent to which these properties receive an upgrading in the quality of their view, three categories have been used. These are:

No change in visual quality

Slight improvement in visual quality

Significant improvement in visual quality

To establish the degree of up-grading in the quality of view, it is necessary to assess the existing visual quality of the view and to compare this to an assessment of the resultant quality of the view after the new road proposal is in place. As with the MEA method this assessment process is the subjective response of the landscape consultant.

4.4.14 Details of those properties visually affected by the present road and/or the proposals are included within the appraisal Framework (Section 6.1, Group 2) and illustrated in figure 4.4.

4.4.15 The properties of the Roman Road housing area, particularly those of Newham way, some 80 dwellings, currently severely affected by the A13, would continue to suffer some adverse visual effects. However, the proposed scheme would allow for the improvement of the existing service road in conjunction with parking spaces and the provision of an environmental barrier and screen planting. This would effectively move the A13 some 10 metres further away than it is as present. Although this would significantly improve the visual quality of those properties on Newham Way, at breaks in the barrier wall for access to the A13 and where the flyover structure begins at the eastern end of Newham Way the level of improvement would be less. The residential properties at the far western end of the scheme at Noel Road and Roman Road would experience no change in visual quality. The properties at the eastern end of Roman Road, near to its junction with the A117 would experience a slight improvement in visual quality due to their proximity to the replacement flyover structure. The extended length (160 metres to the east and to the west) of the flyover would have a severe adverse visual effect on these properties, but with ameliorative measures and new alignment of the flyover/junction south of the present alignment would overall represent a slight improvement. Further west long Roman Road, those properties behind the commercial/retail properties fronting Newham Way, who currently have views over the walls of their rear gardens, would continue to be affected due to the extended length of the flyover structure. Ameliorative measures would slightly improve the visual quality of their views.

4.4.16 The extended length of the proposed flyover structure to the east would slightly improve visual quality of view for most properties around the St. Mary Magdalene's Churchyard. The existing trees in the northern third of the area already provide an excellent foil to views from most properties on High Street

South and Norman Road. Those properties of Magdalene and Masefield Gardens, with views of the existing structure, would suffer an adverse visual effect due to the close proximity of the proposed flyover structure. However, the structure would be of an improved appearance and with the provision of environmental barriers would allow those properties effected to enjoy a slight improvement in visual quality.

4.4.17 Additionally, in this location, the residential properties of Hartshorn Gardens would experience a slight improvement and properties with views from Hameway would experience a significant improvement from their present condition, particularly from those rear gardens which directly face the A13, due to the incorporation of environmental barriers. Further to the east the residential properties to the north and east of Gooseley's Playing Fields, on Wolsey Avenue, Gooseley Lane and Folkestone Road would experience significant improvement as well. Residential properties at the very eastern end of Gooseley Lane, including those on Blaney Crescent would experience no significant change from the present because the proposed alignment would not be significantly different from that of the existing and the environmental barriers would terminate at Gooseley's Playing Fields.

4.4.18 Potentially the proposed scheme would have greater impact on the new housing areas to the south than it would to the more established areas to the north. The widening of the A13 to the south would remove existing screen bunds and planting that at present help to break up what would otherwise be an expansive view of the road, although they do not act as a screen of the existing flyover. In addition, the realigned A13 and new flyover would be closer to the housing in the south by between 20 metres and 40 metres. However, the proposed mitigation measures would ameliorate these impacts to the extent that there would not be any down-grading in the visual quality and some improvements in visual quality. The properties that would benefit most from the mitigation measures would be at Orchid Close, Bellflower Close, parts of Nightingale Way, Fleetwood Court, Hallywell Crescent and Harrier Way. These properties would enjoy no change to, or improvements to the visual quality of their views.

4.4.19 In addition to residential properties many of the open areas adjacent to the road, that are either public open space or open to the public with some form of restriction, would also be affected. Gooseley's Playing Fields is currently partially screened by its boundary trees but these trees do not screen low-level views and as a consequence the park is quite severely affected. The northern third of St. Mary's Churchyard and nature reserve is well buffered by existing mature trees. However, the southern two thirds are comparatively open and exposed. The increased length of the flyover structure would increase the adverse visual effects of the traffic, but this would be mitigated by an improved structure with associated visual barriers and in due course, by screen planting. Views from Beckton Alps are expansive and dramatic. They include of course views of this entire section of the A13, as well as the flyover and A117. There is little that can be done to ameliorate the effects of the road and junction when viewed from Beckton Alps, except in the design of a more aesthetically pleasing flyover structure. The driving range and Beckton United football ground is currently severely affected but is at least set back from the junction beyond the allotments. Beckton District Park is at present

well screened from the A13 by bunding and planting. The proposed scheme requires a realignment that would affect a thin strip of land of the Park. It is not anticipated, however, that the Park would suffer any adverse visual impact because of this.

4.4.20 Out of a total of 555 properties currently visually affected by the present road some 459 properties would remain affected to varying degrees. Under the definitions of the Manual of Environmental Appraisal, no properties would suffer a down-grading in the quality of their views and a total of 398 properties would enjoy an improvement. Those properties which would experience an improvement in visual quality are heavily dependent on the environmental barrier mitigation measures, both against the A13 and on the flyover. Views of the lengthened flyover structure and widened A13, particularly from longer distances would remain. In conclusion, it is considered that the proposals represent an improvement in terms of visual effect of the A13 and its junction with the A117.

Landscape Proposals

4.4.21 The prime purpose of the planting would be to screen or soften the appearance of the road and its traffic. Generally, both trees and shrub planting would be needed to screen high and low-level views. The selection of species would reflect the degree of screening required, liability to vandalism and the likely ground conditions. The details of the planting and hard landscape of the published scheme would be discussed with the local authority prior to the completion of the detail design.

The following describes the detailed landscape proposals for the various areas and is illustrated in Figure 4.5. Cross sections along the route and general impressions of the completed scheme are shown in Figures 4.6 and 4.7.

(a) *Newham Way (West)*

Adjacent to the residential area to the north of Newham Way, a one-way service road, footway and on-street parking area is proposed. This area would be paved throughout in a sympathetic material such as coloured paviours. Bollards would be sited to prevent parking on the footway but access would be retained to those properties with a parking facility in their front gardens. The area would be lit.

To screen the A13 a buffer strip (varying between 3.5 and 9.0 m) would be incorporated between the service and trunk road. As part of these proposals, environmental barriers 3.5 metres in height would run along the trunk road side whilst raised planting on the residential side would further screen the A13 and soften the barrier.

(b) *St. Mary Magdalene's Churchyard*

At St. Mary Magdalene's Churchyard the existing A13 embankment would be densely planted to provide a buffer for the nature reserve. A further area of up to 20 metres wide would be available at the top of the embankment for landscape treatment. This would include the footway/cycleway as well as shrub planting and limited tree planting (to retain a sense of openness for security reasons). The footway/cycleway would be lit.

(c) *A13/A117 Junction*

The connection across the A13/A117 junction, for the possible footway/cycleway along the embankment of the Northern Outfall Sewer would be identified by using coloured concrete paviours. The footway/cycleway paving detailing of the entire junction would be designed to clarify the pedestrian/cycle routes as well as to upgrade the appearance. Tree and shrub planting would be incorporated alongside the pedestrian routes to soften the area. Raised beds would also help protect this planting. Fencing would be provided to prevent pedestrians accessing this area under the flyover.

(d) *Noel Road Footbridge and the Nursery*

From Noel Road footbridge up to the start of the flyover structure, space available for planting is limited. As previously described, an environmental barrier is proposed to minimise landtake. Off-site planting would be carried out subject to the agreement of the London Borough of Newham for their nursery site, and at the open space between the nursery and East Ham Industrial Estate.

(e) *Golf Driving Range and Beckton Alps*

Three of the eleven trees fronting the golf driving range will be lost due to the need to widen the A117. Dense screen planting would be provided on the proposed slip road embankments to the north of both the golf driving range and Beckton Alps.

(f) *Masefield Gardens Housing Estate and Gooseley's Playing Fields*

An environmental barrier would be provided for the entire road frontage of the Masefield Gardens Housing Estate and Gooseley's Playing Fields. This structure would be 2.0 m high. The existing trees along the Gooseley's Playing Fields boundary would be retained.

(g) *Off Site Planting*

Figure 4.5 shows the area of land outside the new highway boundary where additional planting could be undertaken. However, planting in these areas would be subject to consultation and agreement with the land owners, and therefore are not firm proposals.

(h) *Environmental Barriers*

Environmental barriers would be constructed of or faced with materials sympathetic to the surroundings and would be chosen in consultation with the local authority. Careful consideration will be given to the selection of suitable facing materials to deter graffiti for locations with public access.

For the flyover, it is proposed to provide 2 metre high environmental barriers along both sides. The design of the barriers would be carefully integrated with the design of the flyover structure itself.

4.5 Ecological Resources

4.5.1 Wildlife habitats and species in the vicinity of the A13 and A117 are already subject to considerable traffic impacts. Of relevance are atmospheric pollution from vehicular exhaust emissions, disturbance, and severance of ecological resources. Much vacant and waste land to the south of the A13 has been developed in the past decade, with loss of habitats and disruption of ecological corridors.

4.5.2 Improved free traffic flow across the A13/A117 junction would be expected to result in an overall improvement in air quality as discussed in Section 4.8. This will be further assisted by stricter emission controls in the future.

4.5.3 Some adverse impacts from the junction improvement would arise from land take. Losses of, and disturbance to, wildlife habitats and species, with appropriate mitigating measures and creative conservation opportunities are considered below and in Section 5.3.

4.5.4 No statutorily designated sites of ecological importance would be destroyed or damaged by the A13/A117 junction improvements. However, parts of various sites of borough importance would be affected directly by land-take. Most impacts, though, would be on areas of minor ecological significance.

East Ham Nature Reserve

4.5.5 A potential Local Nature Reserve, at the St. Mary Magdalene churchyard, is of local ecological significance, but will not be affected by land take for the proposed junction improvement.

Vacant Land West of Newham Nurseries

4.5.6 The area of roughland south of the A13 is zoned for development ultimately. Land take would be negligible and there would be no loss of the habitats for which the site is important, only to some ornamental plantings and in the area designated for development, not in the sensitive areas of conservation interest. As elsewhere, effects of nuisance dust would only be local and would have no significant impact, particularly as major earthworks would not be carried out in the vicinity.

Vacant Land East of Newham Nurseries

4.5.7 Habitat loss for the road junction improvement will be negligible in comparison with its total area. Dust levels detrimental to wildlife are not anticipated.

Northern Outfall Sewer

4.5.8 The junction improvement will result in disturbance to, and loss of, two small areas of sewer embankment, a Grade 2 Site of Borough Nature Conservation Importance. These impacts would be localised in relation to the length of embankment. This linear site is already fragmented at the junction, so the overall ecological importance would not be affected.

Beckton Alps

4.5.9 The junction improvement will take less than 8% of the 6.4 hectares of the Beckton Alps site (of Grade 2 Borough Importance), and none of the area of nature conservation interest. The junction widening will have no impact on the upper grassy slopes of Beckton Alps, or the valuable scrub habitats, with their bird communities.

Grazing and Waste Ground

4.5.10 There is minor, local ecological interest in the vacant land in this area, especially for its diversity in an urban environment. Some interesting species have been recorded, such as the Patience Dock on the area of rough grassland and ruderal species to the east of the nursery, already allocated for residential development. There are also locally interesting wetland areas to the south-east of the junction. However, the ecological significance is reduced in areas used for grazing (which encourages grasses and suppresses scrub), and generally minimal land take would not be of overall significance, although such areas should be retained when possible.

Roadside Planting

4.5.11 Existing roadside planting and vegetation that has colonised naturally has no ecological significance. Habitat losses to bird species supported in hedgerow scrub

can be mitigated by planting adjacent to the new road alignment, as part of landscaping and screening proposals.

Central Reservation Vegetation

4.5.12 Habitats at certain lengths along the central reservation of the A13 have colonised naturally. They are of no ecological importance, because they are already stressed by traffic pollution, the effects of salt from the road and also from the continuing recent drought, and can be readily replaced.

Amenity Grassland

4.5.13 Other areas of amenity grassland, including Goosley's playing fields, are species-poor and ecological impacts would not result from land take.

4.5.14 Loss of nine mature poplars fronting the A13 at East Ham Industrial Estate, covered by a Tree Preservation Orders, would present a local ecological loss and visual impact. This can be mitigated against in the long term with replanting in the vicinity.

Overall Impact

4.5.15 The overall impacts of the proposed junction improvements are therefore expected to be minimal on ecological resources. Considerable environmental benefits will result from sensitive landscape planting associated with the scheme. This will enhance the diversity of plant species in the area, with an expected increase in the fauna supported.

4.6 Archaeology and Architecture

4.6.1 Most potential archaeological impacts will arise during the construction phase for the junction improvements, rather than when it is completed, and these are discussed in Section 5.3.12 and 5.3.13.

4.6.2 It is not anticipated that atmospheric emissions or vibration from traffic using the new road alignment will have any implications for St. Mary Magdalene church, or other archaeological or architectural features.

4.7 Geology and Drainage

4.7.1 The major earthworks within the proposed scheme would be the southern slip roads, extending from Masefield Gardens in the east to the London Borough of Newham Nurseries in the west. The southern slip roads would be constructed entirely on filled embankments with minimal excavated material. For this reason the local geology would not be affected.

4.7.2 It is proposed to provide positive drainage throughout the scheme, discharging into the existing 1.8 metre diameter sewer to the west of the A117 and into the existing 2.1 metre diameter sewer to the east of the A117, therefore relieving the demand on the existing watercourses.

4.8 Air Quality

4.8.1 An assessment has been carried out of the scheme's impact on atmospheric pollution levels. Detailed results are given in Volume II, Section 2 of the Environmental Statement. Motor vehicles emit various quantities of pollutants in their exhaust gases. These pollutants have been shown to disperse rapidly as they are carried away from the road. The impact of the proposed scheme has been assessed comparing the concentrations of carbon monoxide for the proposed scheme with those from the existing road layout. The assessment has been made using traffic figures for the year 2012. The results have been processed to produce a contour plan (Figure 4.8) showing which areas around the junction will show an improvement or deterioration in air quality. Using this plan the number of residential properties subject to an improvement or deterioration in air quality have been determined as shown in Table 4.1.

POLLUTANT	Number of Properties subject to: Improvement	Deterioration
Carbon Monoxide	510	13
Lead	24	125
Nitrogen Dioxide	506	629
Hydrocarbons	19	15

TABLE 4.1: NUMBER OF PROPERTIES SUBJECT TO AN IMPROVEMENT OR DETERIORATION IN AIR QUALITY 2012

4.8.2 The assessment shows that for the majority of the scheme carbon monoxide concentrations will either remain the same or will reduce if the proposed scheme is constructed. This is due to a general improvement in traffic flow on the A13 and the removal of queues at the junction. Vehicles in queues tend to emit larger amounts of carbon monoxide than when the traffic is free flowing. A small number of properties would experience a small increase in carbon monoxide concentrations to the west of the A13/A117 junction.

4.8.3 A similar assessment has been made for three other vehicle related pollutants, nitrogen oxides, hydrocarbons and lead. The results are also given in Table 4.1. These show that for lead, more properties would be expected to experience a deterioration in concentrations than an improvement. However, by 2012 it is unlikely that the use of leaded fuel will be significant. Therefore, vehicle emissions will not be contributing significantly to roadside lead levels. For nitrogen oxides and hydrocarbons the number of properties expected to experience an improvement or deterioration in concentrations are similar. Emission of both pollutants are likely to reduce substantially with the introduction of emissions control.

4.8.4 The introduction of emission controls into the UK is likely to result in a substantial improvement of roadside air quality. With the implementation of further vehicle emission controls, concentrations of all vehicle related pollutants should be below present UK and EC standards and guidelines.

4.9 Noise

4.9.1 The method of assessment of the noise impact of the proposed scheme is based on the Department of Transport's Manual of Environmental Appraisal and calculated in accordance with the 'Calculation of Road Traffic Noise'.

4.9.2 In accordance with its recommendations, the expected changes of noise levels have been used as the basis of assessing the noise impact of this scheme. Each affected property is assigned to a particular category of change of noise level, either increase or decrease, as shown in Table 4.2 below. Where a property is subject to different changes on different facades, the greater increase or lesser decrease is assumed.

Description in this report of changes in noise level dB(A)	**Magnitude of changes in noise L_{10} (18 hour) dB(A)**	**Perceived effect of loudness**
Considerable increase	Increase of 10 to 15	Doubling or more
Noticeable increase	Increase of 5 to 10	Less than doubling
Slight increase	Increase of 3 to 5	Perceptible increase
No significant change	Changes of less than 3	Imperceptible change
Slight decrease	Decrease of 3 to 5	Perceptible decrease
Noticeable decrease	Decrease of 5 to 10	More than halving
Considerable decrease	Decrease of 10 to 15	Halving or less

TABLE 4.2: DESCRIPTION OF CHANGES IN NOISE LEVEL

4.9.3 In the assessment, predictions have been made of the change of noise in 1991 to that expected fifteen years after the road has been opened (the design year) 2012.

4.9.4 The need to minimise noise impact has been a consideration in the design of the scheme with the provision of environmental barriers. The assessment shows that an estimated 96 properties would experience a decrease in noise levels, of which the majority would benefit from a considerable decrease. (Figure 4.9). This compares with an estimate of 235 properties which will increase in noise. Of these properties 221 will have a slight increase and 14 dwellings with a noticeable increase. Further details are given in Volume II, Section 3 of the Environmental Statement.

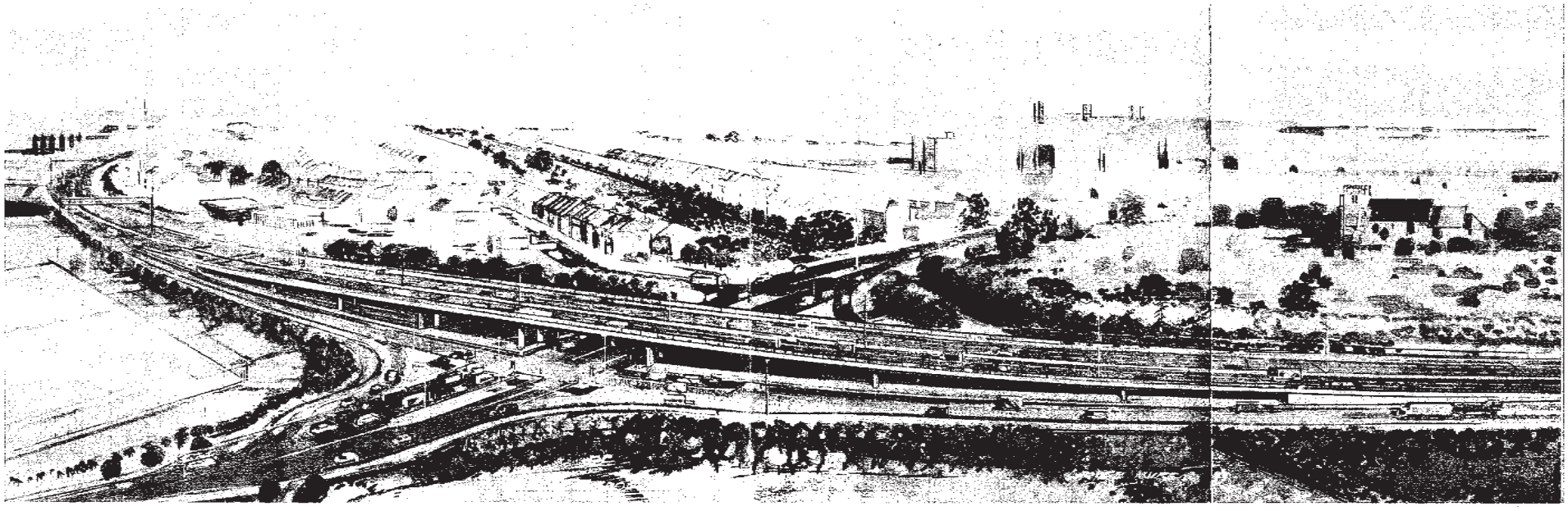
4.10 Vibrations

4.10.1 A study was undertaken to assess the effects of groundborne and airborne vibrations resulting from the proposed scheme. The realignment of the existing road to the south will provide considerable benefits to the properties on the north side of the A13. The properties on the south side would be closer to the road, however, the reconstruction of the road will eliminate the existing surface irregularities and so reduce the level of groundborne vibration. This will more than compensate for the closer proximity of the road to the properties.

4.10.2 Airborne vibrations, transmitted as noise, will increase as the traffic flow increases. However, the increase will be mitigated, at certain locations, by the construction of the environmental barriers. The areas affected by sound pressure levels would be similar to the noise assessment detailed in Volume II, Section 3 of the Environmental Statement.

4.10.3 The most sensitive structure in the vicinity of the proposed works is the Church of St. Mary Magdalene. The lowest "threshold of safety" for sensitive buildings of historic interest is a peak particle velocity (PPV) of 3.0 mm/s (new, 1986). The church is some 170 m from the proposed works. At this distance, the anticipated likely vibration level is 0.2 mm/s from construction operations employing piling and vibratory compaction. Such operations are, therefore, most unlikely to cause damage to the church. The vibrations would be closely monitored (using triaxial geophone) to ensure that the safety threshold is not exceeded. In the unlikely event that vibration levels become a cause for concern, the method of construction would be reviewed.

4.10.4 Further details on vibrations are given in the vibration report in Volume II, Section 4 of the Environmental Statement.



THE DEPARTMENT OF TRANSPORT

NOTE: The planting shown assumes approximately 10 years of growth

ARTIST'S IMPRESSION OF SCHEME

acer 7

FIGURE 4.7

SECTION 5

EFFECTS OF CONSTRUCTION

5.0 EFFECTS OF CONSTRUCTION

5.1 Introduction

5.1.1 The scheme involves the construction of approximately 2 km of dual carriageway, a viaduct over the A117, upgrading the A117 around the junction, reconstruction of Gooseley Lane footbridge, modification of Noel Road footbridge and services diversions.

5.2 Construction Phasing and Traffic Delays

5.2.1 The construction phasing proposals have been developed such that traffic delays due to construction are kept to a minimum. The new flyover would be located some 30 metres south of the existing one and it would therefore be possible to construct it whilst keeping the existing one operational.

5.2.2 The main phases of construction are as follows:

Phase 1 - Under the advance works contract divert existing services and construct the southern slip road embankments. During this phase the traffic would be unaffected as the works would be confined outside the highway limits (Figure 5.1). In addition, parts of the southern carriageway would be constructed under the main works contract.

Phase 2 - As part of the main contract, the westbound traffic would be diverted onto the southern slip roads and the eastbound traffic work would remain unchanged (Figure 5.2). This would release the area required to construct the new flyover.

Phase 3 - Having constructed the new flyover the traffic would then be diverted onto this, allowing demolition of the existing flyover and the completion of the junction (Figure 5.3)

5.2.3 In addition, there would also be intermediate phases of work during which the remaining roadworks and services diversion would be carried out.

5.2.4 It is intended to maintain the existing number of traffic lanes throughout the construction period, however, there will inevitably be periods where lane closures are required in order to reconstruct the existing carriageway. These would be kept to a minimum and would be agreed in advance with the local authorities and the police.

5.2.5 Accesses to all properties would be maintained at all times and where roadworks require temporary closures, alternative accesses would be provided. The cycletrack on the south side of the A13 would not be available for use until completion.

5.3 Construction Disturbance

5.3.1 It is intended that the major construction activities would commence in spring 1994 for a period of 6 months and again in summer 1995 for a period of 24 months. Services diversions, starting in late 1993, will continue intermittently until summer 1997 during the construction of the scheme.

5.3.2 There are a number of potential sites away from residential areas for the contractors' accommodation, storage and working areas. The appointed contractor would identify a site for a construction depot subject to local planning permission.

Material Source and Disposal

5.3.3 Approximately 65,000 cubic metres of earthworks fill material will be imported to the site for the construction of the slip road embankments, flyover and other areas of fill. The construction works will also generate approximately 12,000 cubic metres of material unsuitable for use as fill, which will be exported from the site for disposal. The source of imported material and the destination of materials for disposal will be the responsibility of the Contractor appointed for the works. In both cases, the Contractor will be subject to the statutory planning controls enforced by the Local Authorities and the statutory requirements for waste disposal.

Noise, Dust and Vibrations

5.3.4 An assessment of construction noise has been carried out, using the British Standard methods of calculation. This assessment shows that all the properties considered are expected to experience increases in noise levels during construction when compared with the existing noise levels. Details of the assessment are given in Volume II, Section 3 of the Environmental Statement.

Construction activities will also create an increased vibration and dust nuisance from increased traffic movements as well as engineering activities. Mitigation measures will include:

- o use of bored piling rather than driven piles to reduce the vibration and noise;
- o the maximum noise level will be agreed with the Local Authority and this will be imposed on the contractor;
- o regular cleaning and watering down any dust; and
- o restrictions on the general use of residential roads.

5.3.5 The demolition of the existing flyover would not result in significant environmental impact as it is a temporary demountable structure that can be rapidly removed.

Geology and Drainage

5.3.6 Good engineering practices would be used to ensure no potential impacts on soils or local watercourses in the event of any spillage from construction vehicles or equipment. There are no particularly sensitive surfaces or groundwaters near the A13/A117 junction, so normal precaution would be taken to avoid accidental spillage of oil and other contaminants thus protecting the local geology and drainage.

Ecology

5.3.7 At East Ham Nature Reserve, some temporary effects may result from nuisance dust during the road construction, but the area of embankment most likely to be affected by the existing A13 has been planted relatively recently and any vegetation loss can be readily replaced. Habitat degradation is therefore not anticipated. Disturbance to fauna in the East Ham Nature Reserve is not anticipated to be significantly over that experienced daily in this noisy location, and impacts are expected to be minimal to fauna adapted to urban environments.

5.3.8 Elsewhere, at areas of ecological interest along the junction improvement, effects of nuisance dust would only be local and would be anticipated to have no significant ecological impact. Construction dust problems would not be expected to have an appreciably greater impact on ecological habitats than that currently arising from the traffic Disturbance at the junction.

Archaeology and Architecture

5.3.9 Potential archaeological impact will arise during the construction phase of the junction improvement from land disturbance. The main areas of potential heritage impact are shown on Figure 2.10, where finds have been made in the past.

5.3.10 Much of the proposed route is on or immediately adjacent to land disturbed in recent times for construction of the A13. However, depending on the excavation methods adopted, it is expected that further buried archaeological remains would be discovered. In particular, in the area by the Northern Outfall Sewer and St. Mary Magdalene churchyard, where Roman burial remains were unearthed, further Roman finds are anticipated by English Heritage. The route for the proposed junction improvement scheme is aligned to the south of the main Saxon, Norman, medieval and subsequent settlements in East Ham, so less of more recent archaeological interest is expected to be disturbed.

5.3.11 It has been suggested that during the construction of existing temporary flyover at the A13/A117 junction some structural damage occurred to St. Mary Magdalene church, a Grade I Listed Building. A vibration assessment has indicated that such damage is unlikely to be caused by construction work and that the proposed construction works, and vibration would not be expected to have any impacts on the church structure as discussed in Section 4.10.3.

Mitigating Measures

5.3.12 English Heritage have indicated that the proposed A13/A117 junction improvements have archaeological implications. It is intended that an initial assessment is undertaken. This would indicate the state of preservation of any remains, and allow the formulation of the most effective method of ensuring their preservation.

5.3.13 In addition, a watching archaeological brief would be possible throughout the construction period. Where the archaeological investigation indicates that remains are present, considerable attention would be paid during excavation works by all site personnel.

SECTION 6

IMPACT OF THE PUBLISHED SCHEME

GROUP 1: TRAVELLERS

			PUBLISHED ROUTE		DO-MINIMUM		COMMENTS
Sub-Group	Effect	Unit	High	Low	High	Low	
CAR USERS	Time savings	£m(PVB)	20.8	16.1	0	0	Present value of benefits (PVB) are for a 30 year period assuming scheme opening in 1997. The PVB's are discounted back to 1988 price levels at 8% p.a. It is assumed that bus operators and passengers will derive benefits from reduced delays and increased travel speeds but these have not been quantified. PVB = Present Value Benefits
	Vehicle operating cost savings	£m(PVB)	-0.7	-0.4			
USERS OF LIGHT GOODS VEHICLES	Time savings	£m(PVB)	10.6	8.2	0	0	
	Vehicle operating cost savings	£m(PVB)	-0.4	-0.3	0	0	
USERS OF OTHER GOODS VEHICLES	Time savings	£m(PVB)	6.4	5.0	0	0	
	Vehicle operating cost savings	£m(PVB)	-0.7	-0.6	0	0	
BUS OPERATORS and PASSENGERS	Time savings	£m(PVB)	0	0	0	0	
	Vehicle operating cost savings	£m(PVB)	0	0	0	0	
ALL VEHICLES TRAVELLERS	Value of accident savings	£m(PVB)	3.4	2.6	0	0	
	Decrease in Casualties:-						
	Fatal	Number	12.3		0		
	Serious	Number	118.6		0		
	Slight	Number	348.0		0		
	Driver stress		Moderate		High		

GROUP 1: TRAVELLERS (cont'd)

			PUBLISHED ROUTE		DO-MINIMUM		COMMENTS
Sub-Group	Effect	Unit	High	Low	High	Low	
ALL VEHICLE TRAVELLERS (cont'd)	View from road		Residential/Recreational/Open Space		Residential/Recreational/Open Space		
	Traffic delays during construction	fm(PVB)	Negligible	Negligible	0	0	Existing traffic capacities will be retained. Westbound A13 traffic will be diverted onto south slip roads, during flyover construction. Free flow for eastbound traffic at the junction will be retained throughout the Construction period.
PEDESTRIANS Peak Hour Crossings at the Junction (2 way) A13 West = 30 A13 East = 38 A117 North = 21 A117 South = 4	Change in amenity		Significant improvement Footpaths alongside A13 realigned and segregated from traffic by landscaping. Substantial landscaping under flyover and around signalised junction.		Deterioration as traffic volume increases.		Movements via existing footbridges unaffected.
	Safety		Significant improvement. Signal crossings provided on all arms of junction. Refuges provided on A117. Footpaths alongside A13 segregated from traffic.		Crossing at A13/A117 junction more hazardous as traffic volume increases.		

GROUP 1: TRAVELLERS (cont'd)

Sub-group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
PEDESTRIANS (cont'd)	Severance		Slight relief from existing severance. Signal crossings provided on all arms of junction. Slight increase in journey length due to larger junction.	Slight increase in existing severance as traffic volume increases.	
	Disruption during construction		During construction crossing facilities at the junction will be similar to existing conditions.	None	
CYCLISTS Peak Hour Crossings at the Junction (2 way) A13 East = 12 A13 West = 25 A117 North = 14 A117 South = 2	Change in Amenity		Significant improvement. Cyclists would be able to use the proposed service road on the north-west side of A13. Provision for cyclists made within the junction.	Deterioration as traffic volume increases.	At present there are cycle tracks on the north and south side of the A13. Currently there are no facilities for cyclists within the A13/A117 junction.
	Safety		Substantial improvement. Conflict-free crossing possible at junction. Cycle tracks alongside A13 segregated from traffic.	Deterioration as traffic volume increases.	

GROUP 1: TRAVELLERS (cont'd)

Sub-group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
CYCLISTS (Cont'd)	Severance		Slight relief from existing severance. Signal crossings provided on all arms of junction. Slight increase in journey length due to larger junction.	Slight increase in existing severance as traffic volume increases.	
	Disruption during construction		Cycle track on southside of A13 will not be available for use until completion of construction. Existing cycle track on northside of A13 can be used as an alternative during construction.	None	

GROUP 2: OCCUPIERS

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
RESIDENTIAL	Noise effects	Number of houses experiencing an increase of more than			Predicted future noise increases are calculated assuming 3.5m high environmental barrier on the north-west side of the A13 from west of Noel Road to the beginning of the flyover, a 2.0m high environmental barrier on the south-west side of the A13 from East Ham Industrial Estate to the beginning of the flyover, a 2.0m high environmental barrier on both sides of the flyover and a 2.0 m high environmental barrier on the north-east side of the A13 from Magdalene Gardens to Gooseley Lane. Prevailing noise levels before construction were calculated using 1991 traffic flows and resulting changes in noise levels were calculated using 2012 forecasts traffic flows.
		15 dB(A)L10	0	0	
		10 - 15 dB	0	0	
		5 - 10 dB	14	0	
		3 - 5 dB	216	0	
		TOTAL	230	0	
		Number of houses experiencing a decrease of more than			
		15dB(A)L10	0	0	
		10 - 15 dB	64	0	
		5 - 10 dB	19	0	
		3 - 5 dB	9	0	
		TOTAL	92	0	
	Air Quality		See notes in Comments column		510 properties would have an improvement in air quality, 13 properties would have deterioration in air quality in the year 2012 for the Published Route.

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
RESIDENTIAL (Cont'd)	Visual Obstruction	Number of Premises within 300m of centre line. Subject to:			
		High	21	18	The proposals replace the existing flyover with longer dual 3 lane flyover. Environmental barriers will screen most vehicles.
		Moderate	152	132	
		Slight	142	85	
	Visual Intrusion		Nil results, refer to Comments column		The degree of visual impact experienced by the following properties would be significantly improved with the Published Route: Nos 1001-1079 and 1087-1171 odd, Newham Way Nos 1-16 the Laburnums Nos 14-16 Magdalene Gardens Nos 21-35 odd, Hameway Nos 2-94 even, Wolsey Avenue Nos 93-125 odd, Gooseley Lane Nos 2-32 even, Nightingale Way Nos 130-136 even, and 159-165 odd, Folkestone Road Nos 1-11 odd, Eisenhower Drive Nos 1-15 odd, Sorrel Gardens Nos 4-8 Orchid Close The degree of visual impact experienced by the following properties would be slightly improved with the Published Route: Nos. 1-18, 2A, 4A, 5A, 20-64 even, 25-95 odd and 250-254 even, Roman Road Nos. 1-13 Magdalene Gardens Nos. 1-14 Masefield Gardens Nos. 1-20 Hartshorn Gardens Nos. 2-8 even, Skipsey Avenue Nos. 34-118 even, Nightingale Way Nos. 3 and 9, Orchid Close Nos. 53-71 odd, Hameway

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
RESIDENTIAL (Cont'd)	Visual Intrusion		Nil results, refer to Comments column		The following properties currently affected by the existing road would experience a similar degree of visual impact with the Published Route: Nos. 269-303 odd and 311, Roman Road Nos. 2, 4 and 6 Moel Road Nos. 242-248 even, High Street South Nos. 456-460 even, Lonsdale Avenue Nos. 38-44 even, Hameway Nos. 127-133 odd, Gooseley Lane Nos. 3-17 Harrier Way Nos. 64-73,75-80,41-45,49-51 and 13-28, Fleetwood Court Nos. 5-7, 12-14 and 17-34 Hallywell Crescent Nos. 61-71 and 73-83, Blaney Crescent Nos. 5-20 Bellflower Close Caretaker's House (North Beckton Primary School)
	Severance				
	Relief to existing severance.		Moderate relief from existing severance. Improved access to properties fronting the A13 with provision of new service road and parking lane parallel to A13 to the north-west of junction. Reduction in severance with improved junction design. Roman Road realigned onto A117 moderately improving access.	Slight increase in existing severance as traffic volume increases.	
	Likely disruption during construction	Number of Houses affected by scheme	97	0	The majority of houses affected are in Newham Way, Roman Road and Masefield Gardens. Access to all houses will be maintained throughout construction period.

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MININUM	COMMENTS
INDUSTRIAL PREMISES	Noise effects	Number of premises experiencing an increase of more than			The premises affected are in East Ham Industrial Estate fronting onto the A13.
		15 dB(A)	0	0	
		10 - 15 dB	0	0	
		5 - 10 dB	0	0	
		3 - 5 dB	1	0	
		TOTAL	1	0	
		Number of premises experiencing a decrease of more than			
		15dB(A)L10	0	0	
		10 - 15 dB	0	0	
		5 - 10 dB	0	0	
		3 - 5 dB	0	0	
		TOTAL	0	0	
	Visual Obstruction	Number of premises within 300m of centre-line. Subject to:			
		High	0	0	The premises affected are in the East Ham Industrial Estate, fronting onto the A13.
		Moderate	1	1	
		Slight	0	0	
	Severance		Moderate relief from existing severance. Improved access through A13/A117 junction.	Slight increase in existing severance as traffic volume increases.	

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
INDUSTRIAL PREMISES (Cont'd)	Likely disruption during construction	Number of premises within 100m of site	1	0	Access to industrial premises will be maintained throughout construction period.
	Land take	Hectares	0.07	0	The premises affected are in the East Ham Industrial Estate, fronting onto the A13.

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
SCHOOLS					
(a) North Beckton School (under construction)	Noise effects	dB(A) L10 Increase/ Decrease	0	0	No significant change in noise level.
	Air Quality		See notes in Comments column		Southern side of school will have a deterioration in air quality in the year 2012 with the Published Route.
	Visual Obstruction		Slight	Slight	Caretaker's residence will have moderate obstruction with the Published Route.
	Severance		Improved access through A13/A117 junction.	Deterioration of access through A13/A117 junction due to increase in traffic volume.	
(b) Roman Road Primary School (159 pupils in 1992)	Noise effects	dB(A) L10 Increase	4	0	Slight increase in noise level expected from the Published Route.
	Air Quality		See notes in Comments column		No significant change in air quality in the year 2012 with the Published Route.
	Visual Obstruction		None	None	
	Severance		Improved access through A13/A117 junction.	Deterioration of access through A13/A117 junction due to increase in traffic volume.	

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
COMMERCIAL PREMISES	Noise effects				
		Number of premises experiencing an increase of more than			
		15dB(A)L10	0	0	
		10 - 15 dB	0	0	
		5 - 10 dB	0	0	
		3 - 5 dB	1	0	
		TOTAL	1	0	
		Number of premises experiencing a decrease of more than			
		15 dB(A)	0	0	
		10 - 15 dB	0	0	
		5 - 10 dB	3	0	
		3 - 5 dB	1	0	
		TOTAL	4	0	
	Visual Obstruction	Number of premises within 300m of centre-line. Subject to:			
		High	6	6	
		Moderate	3	1	
		Slight	0	0	

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
COMMERCIAL PREMISES Shops (Cont'd)	Severance		Moderate relief from existing severance. Access to 3 premises fronting onto the A13 improved by new arrangement of entrance/exits. Access to 4 premises in Roman Road improved with realignment of road.	Slight increase in existing severance as traffic volume increases.	
	Likely disruption during construction	Number of premises within 100m of scheme.	6	0	Access to commercial premises will be maintained throughout construction period.

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
OPEN SPACE a) Beckton District Park (Public Open Space)	Landtake	Hectares	0.01	0	
b) Grassed open space including footpath east of East Ham Industrial Estate (Public Open Space)	Landtake	Hectares	0.06	0	
c) Grassed area fronting Roman Manor Community Centre, and the London Borough of Newham Nurseries	Landtake	Hectares	0.64	0	
d) Grassed area including trees, bushes and allotments east of the London Borough of Newham Nurseries	Landtake	Hectares	1.26	0	

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
OPEN SPACE (Cont'd)					
e) Golf Driving Range	Landtake	Hectares	0.17	0	
f) Woolwich Manor Way Transmission Substation and site	Landtake	Hectares	0.08	0	
g) Road Embankment west of A117 fronting the Golf Driving Range	Landtake	Hectares	0.02	0	
h) Beckton Alps	Landtake	Hectares	0.22	0	
i) Rough grassed land including British Gas Compound	Landtake	Hectares	0.22	0	
j) Northern Outfall Sewer northwest, northeast, and southeast of A13/A117 junction	Landtake	Hectares	0.42	0	

GROUP 2: OCCUPIERS (cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
OPEN SPACE (Cont'd)					
k) London Docklands Development Corporation Land leased for stabling and grazing	Landtake	Hectares	1.29	0	
l) Grassed area east of Gooseley Lane	Landtake	Hectares	0.02	0	

GROUP 3: USERS OF FACILITIES

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
a) Users of the Parish Church of East Ham (St. Mary Magdalene and Cemetery) (Average 80 per week)	Noise effects	dB(A) L10 Increase/Decrease	0	0	No significant change
	Air Quality		See notes in Comments column		No significant change in air quality in the year 2012 for the Published Route.
	Severance		Moderate improvement due to easier access and less delays at junction of A13/A117.	Deterioration as traffic volume increases.	
	Visual Obstruction		Slight	Slight	
b) Users of the Parish Church of East Ham (Hall and Sunday School) (Average 260 per week)	Noise effects	dB(A) L10 Increase	4	0	Slight increase in noise expected from the Published Route.
	Air Quality		See notes in Comments column		No significant change in air quality in the year 2012 for the Published Route.
	Severance		Moderate improvement due to easier access and less delays at junction of A13/A117.	Deterioration as traffic volume increases.	
	Visual Obstruction		Slight	None	
c) Users of St. Mary's Museum and Nature Reserve (Average 150 per week)	Noise effects	dB(A) L10 Increase	4	0	Slight increase in noise expected from the Published Route.
	Air Quality		See notes in Comments column		Southern part of the nature reserve would have an improvement in air quality in the year 2012 for the Published Route. The remaining area would have no significant change.

GROUP 3: USERS OF FACILITIES (Cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
c) Users of St. Mary's Museum and Nature Reserve (Continued)	Severance		Moderate improvement due to easier access and less delays at junction of A13/A117.	Deterioration as traffic volume increases.	
	Visual Obstruction		None	None	
d) Users of Allotment Gardens (Average 60 per week)	Amenity		Loss of amenity. All of allotment land taken by scheme.	No change	
e) Users of Golf Driving Range/ Sports Club SW of A13/A117	Noise effects	dB(A) L10 Increase/Decrease	0	0	No significant change
	Air Quality		See notes in Comments column		Deterioration in air quality in the year 2012 for the Published Route.
	Severance		Moderate improvement due to less delays at junction of A13/A117.	Deterioration as traffic volumes increase.	Golf driving range is also used as a sports ground and pavilion.
	Amenity		Moderate reduction in amenity due to loss of area for range.	No change	
	Visual Obstruction		High	Moderate	
f) Users of Tennis Courts, Bowling Green and Gooseley's Playing Fields (Average 1000 per week)	Noise effects	dB(A) L10 Increase/Decrease	0	0	No significant change
	Air Quality		See notes in Comments column		No significant change in air quality in the year 2012 for the Published Route.

GROUP 3: USERS OF FACILITIES (Cont'd)

Sub-Group	Effect	Unit	PUBLISHED ROUTE	DO-MININUN	COMMENTS
f) Users of Tennis Courts, Bowling Green and Gooseley's Playing Fields (Continued)	Severance		Slight improvement due to easier access and less delays at junction of A13/A117.	Deterioration as traffic volumes increase.	
	Visual Obstruction		Moderate	Moderate	
g) Users of Stables (Average 60 per week)	Recreation facility		Significant reduction in recreational facility due to landtake, reducing grazing area and demolition of stables.	No change	
h) Users of Beckton Alps (Average 6000 per week)	Noise effects	dB(A) L10 Increase	2	0	Slight increase in noise expected from the Published Route.
	Air Quality		See notes in Comments column		Deterioration in air quality in the year 2012 for the Published Route.
	Severance		Moderate improvement due to less delays at junction of A13/A117.	Deterioration as traffic volumes increase.	
	Amenity		Slight reduction in amenity due to loss of area.	No change.	
i) Users of Roman Road Community Centre (average 300 per week)	Noise effects	dB(A) L10 Increase/Decrease	0	0	No significant change.
	Air Quality		See notes in Comments column		This facility would have an improvement in air quality in the year 2012 for the Published Route.
	Visual Obstruction		Moderate	Low	

GROUP 4: POLICIES FOR CONSERVING AND ENHANCING THE AREA

POLICY	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
To allow for general improvement of the area	Department of Transport	To improve the environment by removing through traffic from unsuitable roads.	New flyover and improved A13/A117 junction would reduce congestion and delays, and associated pollution.	Deterioration due to increased delays and pollution as traffic volumes increase.	Source: "Trunk Roads, England Into the 1990's" published February 1990.
	London Borough of Newham	Protecting or improving the environment in the area.	Construction of a new flyover to carry all westbound traffic would provide an improved ground level environment by reducing goods vehicles through the junction. Slightly improved outlook for properties at the eastern end of Roman Road. Increased capacity of the A13 would reduce traffic on local roads and through residential areas. Full grade-separation will lessen pedestrian and cyclist/vehicle conflict. The replacement of the existing flyover with a visually more sympathetic structure would enhance the aesthetics of the area. Improved access, service road, parking facilities, landscaped buffer zone for houses fronting A13 Newham Way. No significant impact on ecology.		Source: "East Ham Local Plan" published January 1987.

GROUP 4: POLICIES FOR CONSERVING AND ENHANCING THE AREA (cont'd)

POLICY	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
The Council will develop environmental buffers in association with new development	London Borough of Newham	To cushion sensitive areas from potentially intrusive activities.	Extensive landscaping and environmental screens would improve the environment and contribute greatly to this policy.	No change	Source: "Beckton Local Plan" published 1986.
Prevent loss of public open spaces greater than 2 ha by development	London Borough of Newham	Minimise land take of public open space	Minimum loss of public open space.	No loss of public open space	Source: "Newham Draft UDP"
Safeguard the character of metropolitan open land	London Borough of Newham	Protect areas of open land in a built up area adjacent to the A13/A117 junction	Minimum loss of metropolitan open land.	No loss of proposed metropolitan open land	Source: "Newham Draft UDP"

GROUP 5: TRANSPORT, DEVELOPMENT AND ECONOMIC POLICIES

POLICY	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
TRANSPORT					
a) To relieve traffic congestion on trunk roads and other strategic routes	Department of Transport	Ease of movement.	Substantial improvement with increased capacity provided on A13.	Deterioration as traffic volume increases.	Source: "Trunk Roads, England Into the 1990's" published February 1990.
b) To enhance road safety	Department of Transport	To improve road safety, reduce casualties and provide for safe movement of people, goods and services.	Increased capacity of A13 and improvement of junction A13/A117 would reduce accident potential for all users. Full grade separation would lessen pedestrian and cyclist/vehicle conflict.	Deterioration as traffic volume increases.	Source: "Trunk Roads, England Into the 1990's" published February 1990.
c) Support new road construction if economic and/or environmental benefits will result	London Borough of Newham	Complete trunk road connections and relieve localised environmental problems.	Improve traffic flow at A13/A117 junction.	Increased congestion and delay at A13/A117 junction.	Source: "Newham Draft UDP"

GROUP 5: TRANSPORT, DEVELOPMENT AND ECONOMIC POLICIES (cont'd)

POLICY	AUTHORITY	INTEREST	PUBLISHED ROUTE	DO-MINIMUM	COMMENTS
d) A hierarchy of pedestrian ways and cycleways should link development in Beckton	London Borough of Newham	Provision of facilities for pedestrians and cyclists	Extensive footpaths and cycleways provided at junction and on both sides of the flyover.	No change	Source: "Beckton Local Plan" published 1986.
e) A13 improvement and environmental works- Development Strategy Phase 1	London Borough of Newham	Improve communications on a regional and borough level.	A13 improvements would reduce congestion and delays.	Congestion and delays at junction increase as traffic volume increases.	Source: "Newham Draft UDP"

GROUP 6: FINANCIAL EFFECTS

			PUBLISHED ROUTE		DO-MINIMUM		Comments
Sub-Group	Interest	Units	High	Low	High	Low	
Department of Transport	Construction Cost	£m(PVC)	16.9		0		Construction costs include preparation and supervision costs. PVC = Present Value Cost NPV = Net Present Value
	Land Costs	£m(PVC)	0.1		0		
	Total Costs	£m(PVC)	17.0		0		
Total quantified monetary benefits		£m(PVB)	39.4	30.6	0	0	
Net present value compared to Do-Minimum excluding maintenance and delay costs	Total quantified monetary benefits, less total costs	£m(NPV)	22.4	13.6	0	0	

6.2 Residual Effects

Introduction

6.2.1 Residual environmental effects of the scheme, following the completion of the junction improvement, and allowing time for the landscaping measures to become fully effective, are discussed below:

Benefits of the Junction Improvement

6.2.2 Improved traffic free flow at the junction would generally provide a reduction in hazards and atmospheric pollution from traffic. This will benefit residents, pedestrians, cyclists and those using amenities near the junction.

6.2.3 The provision of an environmental barrier with landscaping would enhance the appearance of the flyover for road users and those living near the junction. It would encourage further environmental improvements in the area.

6.2.4 Those combined improvements would assist Newham Borough Council in achieving objectives of local and regionally strategic planning policy.

6.2.5 The junction improvement would enable the A13 and A117 to operate more efficiently, with less delay for through traffic. Accident rates would decline, with the removal of congestion and conflict, while drivers would experience less stress.

Long Term Disbenefits

6.2.6 The scheme would result in the loss of some planted bunds and a few mature trees. The proposed landscape mitigation measures would considerably reduce the impact of land take, and compensate for the lost trees and wildlife habitats. Such land loss in a development area will not have significant environmental impacts.

6.3 Conclusions

6.3.1 There would be some disruption and disturbance during the construction period for local residents and for those using the junction, but this would be temporary. With the implementation of standard good engineering practices such potentially adverse impacts arising from nuisance dust, noise, vibrations, severance and traffic controls would be minimised. Any archaeological remains would be assessed prior to construction.

6.3.2 Improved traffic free flow would reduce atmospheric pollution problems in the junction area, and would also reduce accidents and driver stress.

6.3.3 Provision of environmental barriers and landscaping measures would considerably enhance the visual appearance of the junction for the local community.

6.3.4 Implementation of the proposed junction improvement would be of long term benefit to the area.

REFERENCES

1. EUROPEAN COMMUNITY: European Community Directive (85/337/EEC) adopted July 1985, implemented July 1988

2. DEPARTMENT OF TRANSPORT: HD 18/88: Environmental Assessment under E.C. Directive 85/337

3. DEPARTMENT OF TRANSPORT: Manual of Environmental Appraisal (MEA) 1983 (Reprinted 1989)

4. DEPARTMENT OF TRANSPORT: Statement on Transport in London, January 1989

5. H.M.S.O.: Cmnd - White Paper: "Roads for Prosperity" 1989

6. H.M.S.O.: Cmnd - White Paper: "Trunk Roads, England into the 1990's"

7. GREATER LONDON COUNCIL: Greater London Development Plan, 1976

8. HIGHWAYS ACT 1980: Part V (A) - as amended by the Highways (assessment of Environmental Effects) Regulations 1988 (SI 1241)

9. East Ham Local Plan 1985

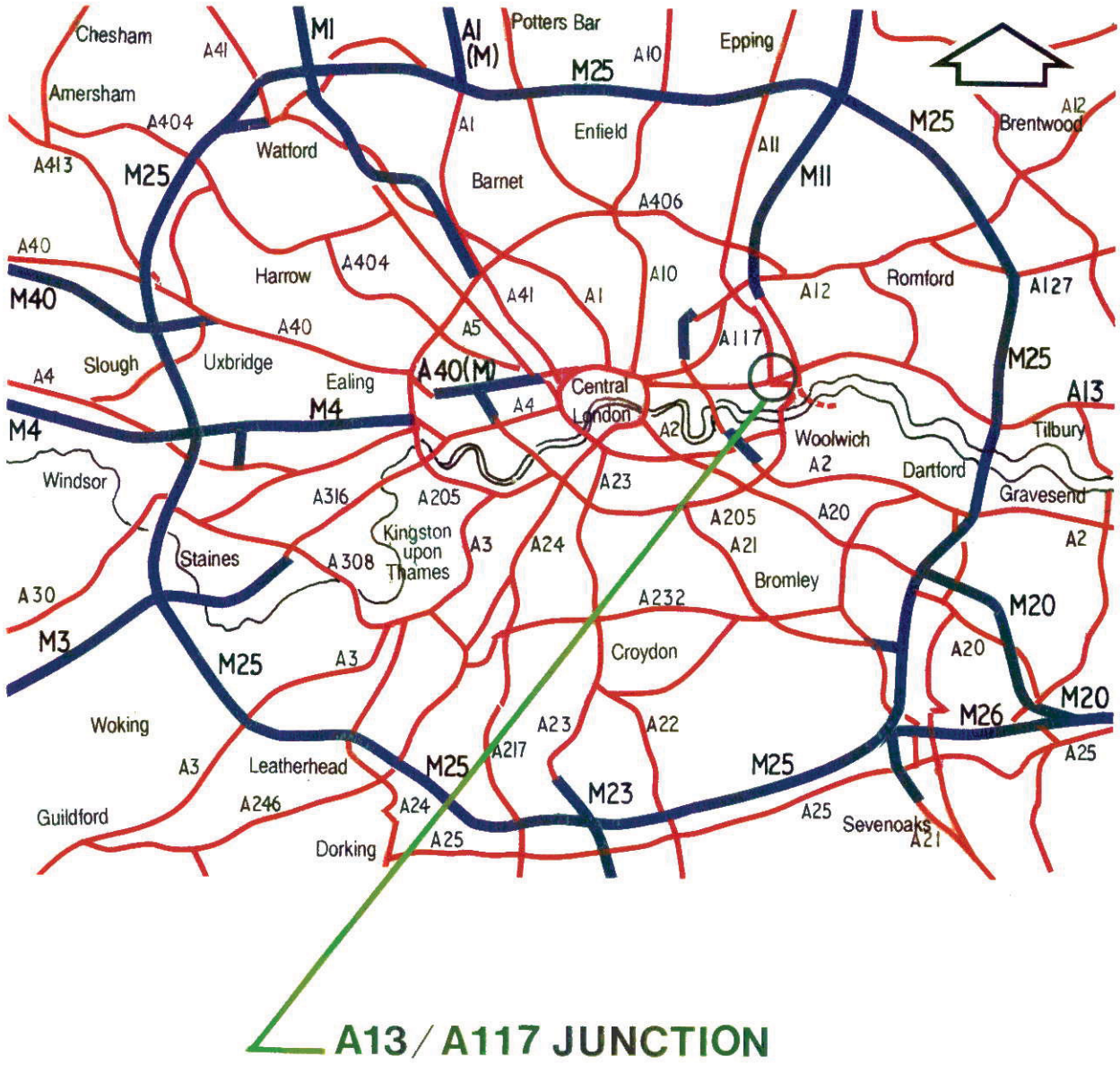
10. Beckton Local Plan 1980

11. London Borough of Newham. Draft Unitary Development Plan (U.D.P.) November 1991

12. The UK Air Quality Standard Regulations 1989

13. DTp Technical Memo "Calculation of Road Traffic Noise" (1988)

NON-TECHNICAL SUMMARY



A13/A117 JUNCTION

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LONDON PRIMARY ROUTES

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FIGURE 1.1

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ROAD NETWORK

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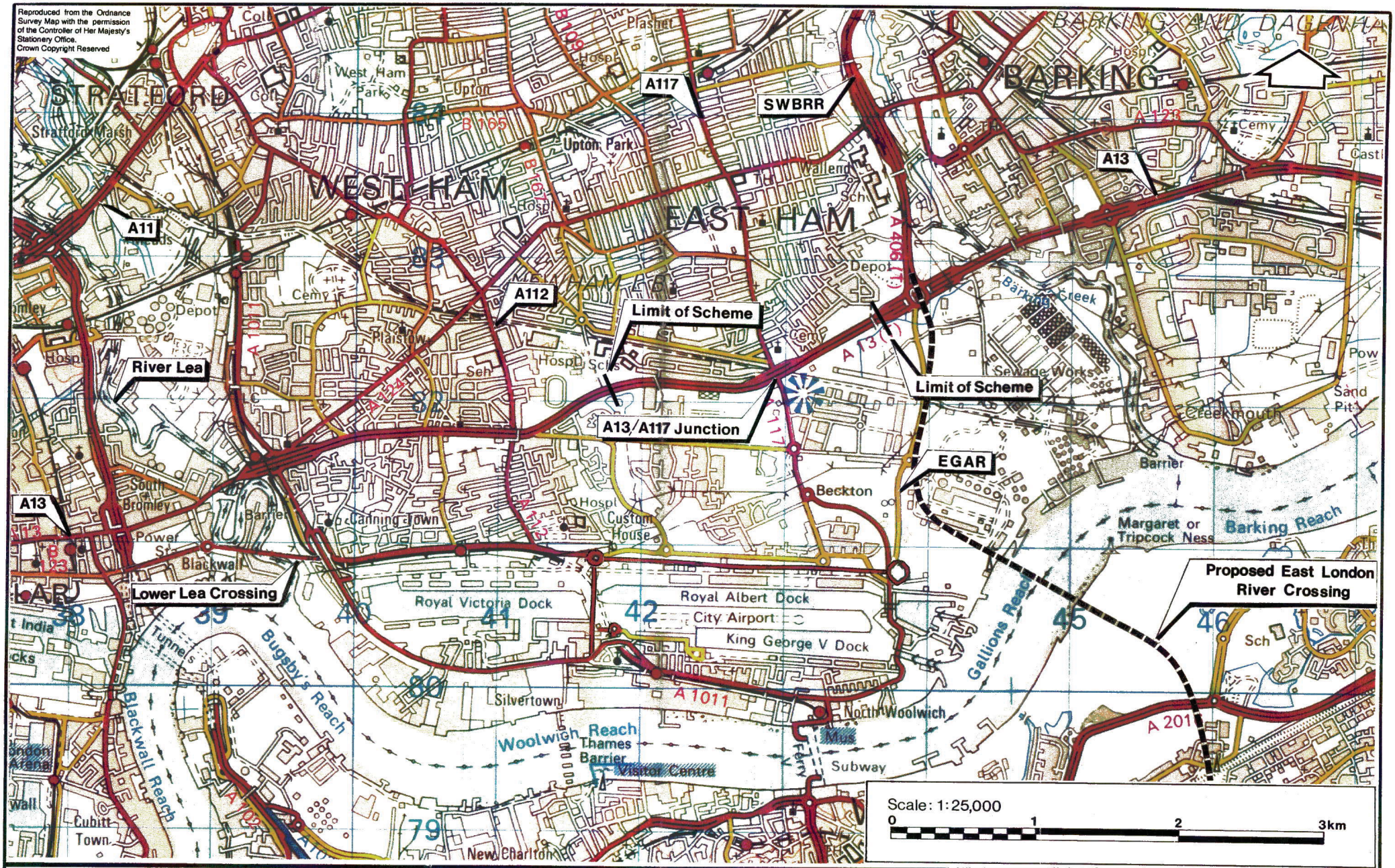
FIGURE 2.1



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LOCATION PLAN

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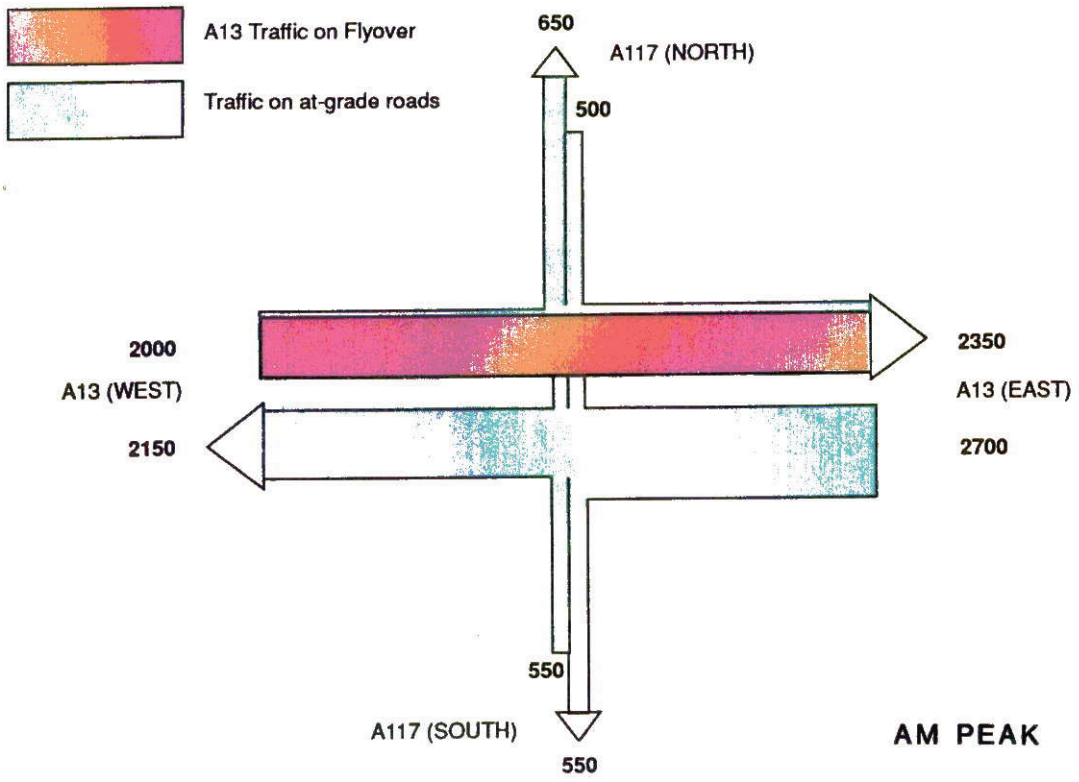
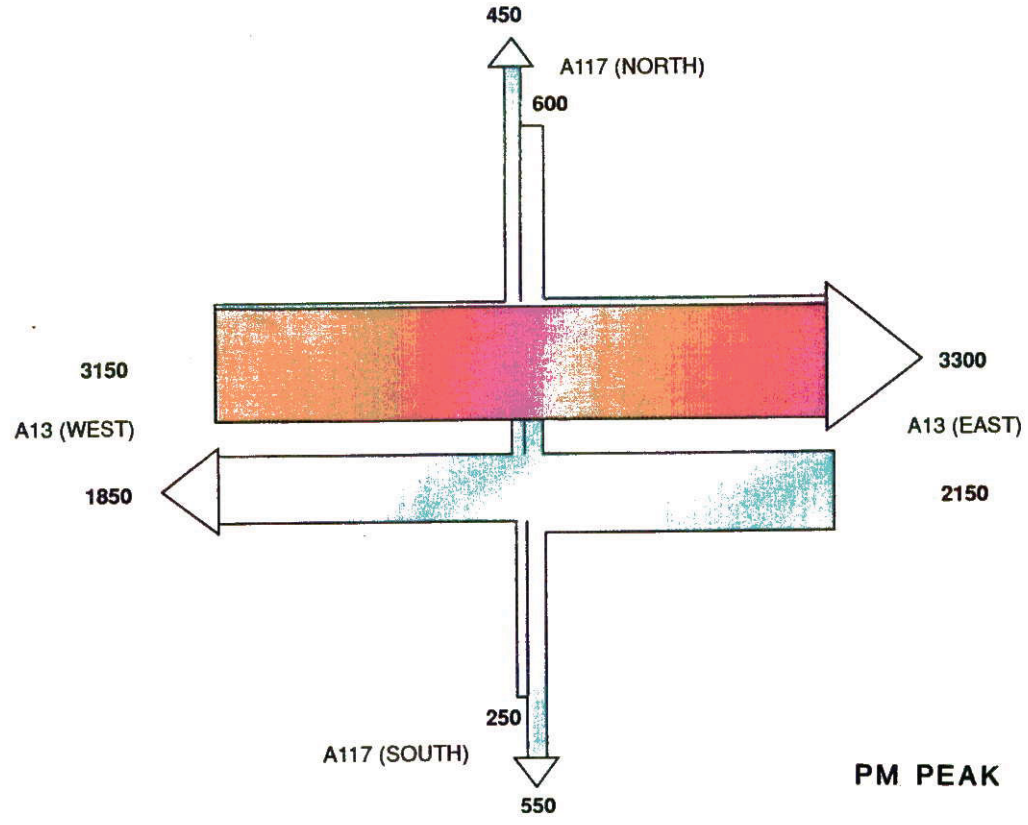
FIGURE 2.3





Notes

1. The width of each line is in proportion to the volume of traffic, so the thicker the line the more the traffic.
2. All traffic flows are given in vehicles per hour.

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1991 TRAFFIC FLOWS

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FIGURE 2.4

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EXISTING LAND USE

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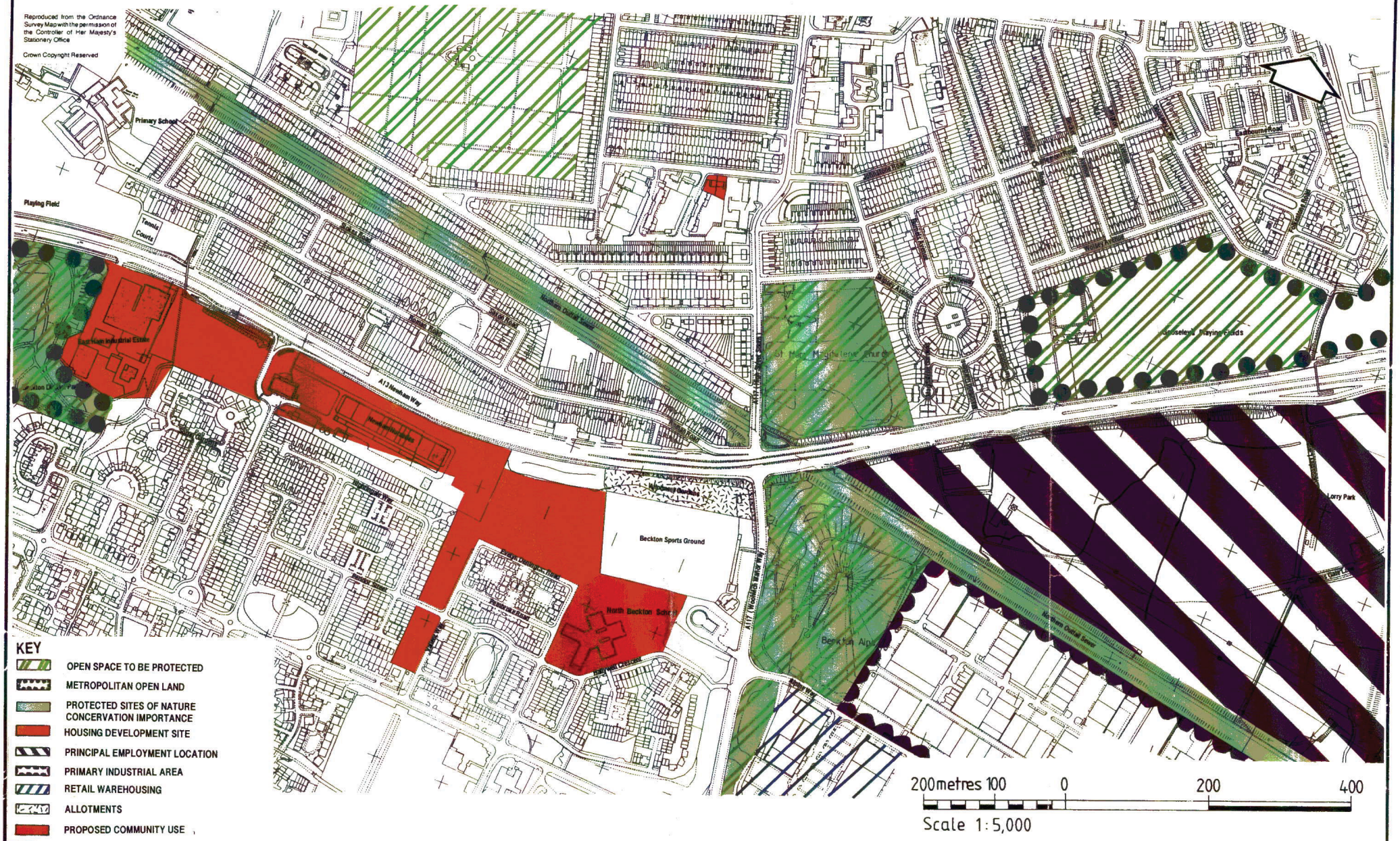
FIGURE 2.6



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NEWHAM BOROUGH DRAFT UDP PROPOSALS

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FIGURE 2.7

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EXISTING ECOLOGY

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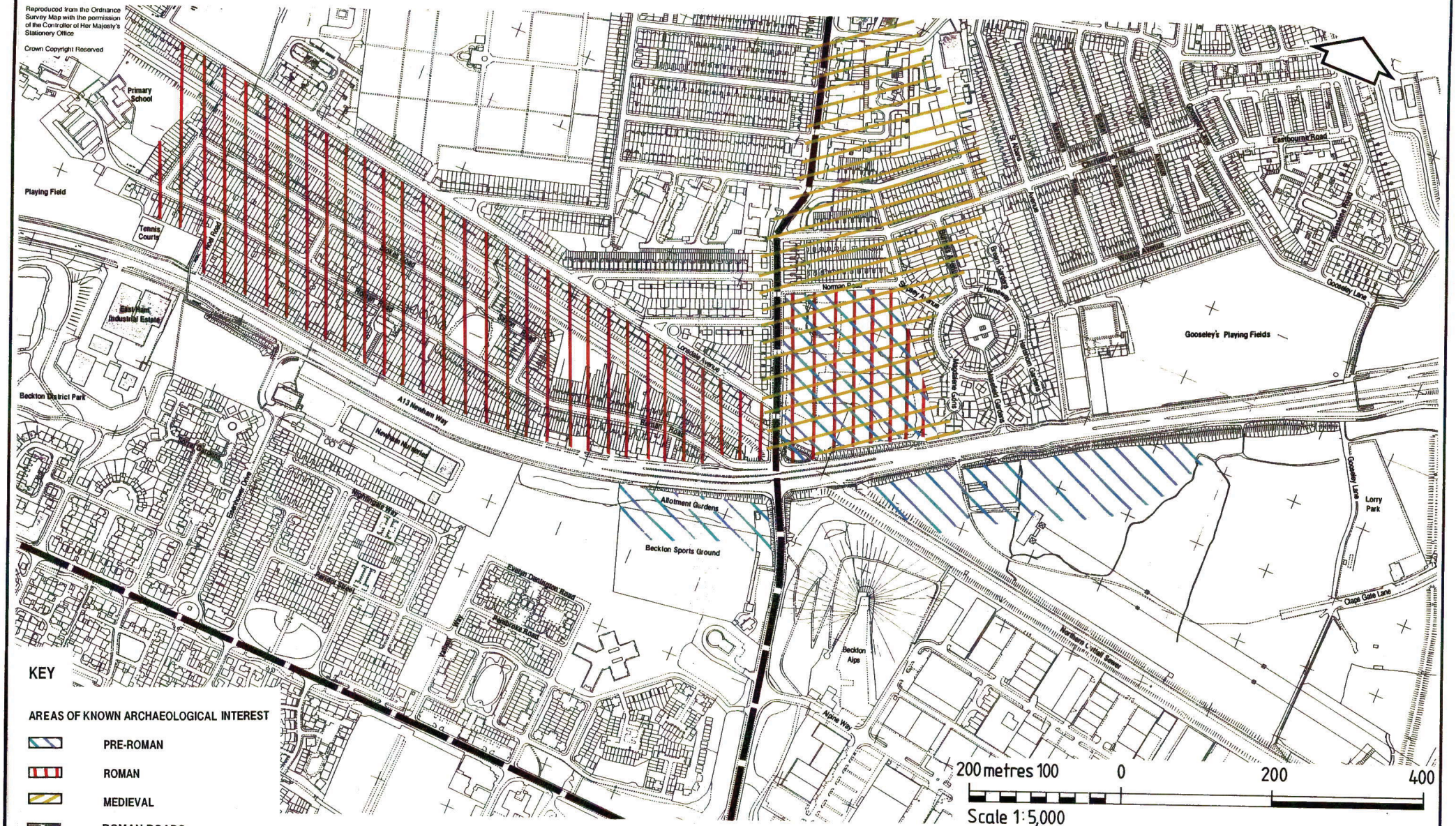
FIGURE 2.9



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AREAS OF KNOWN ARCHAEOLOGICAL INTEREST

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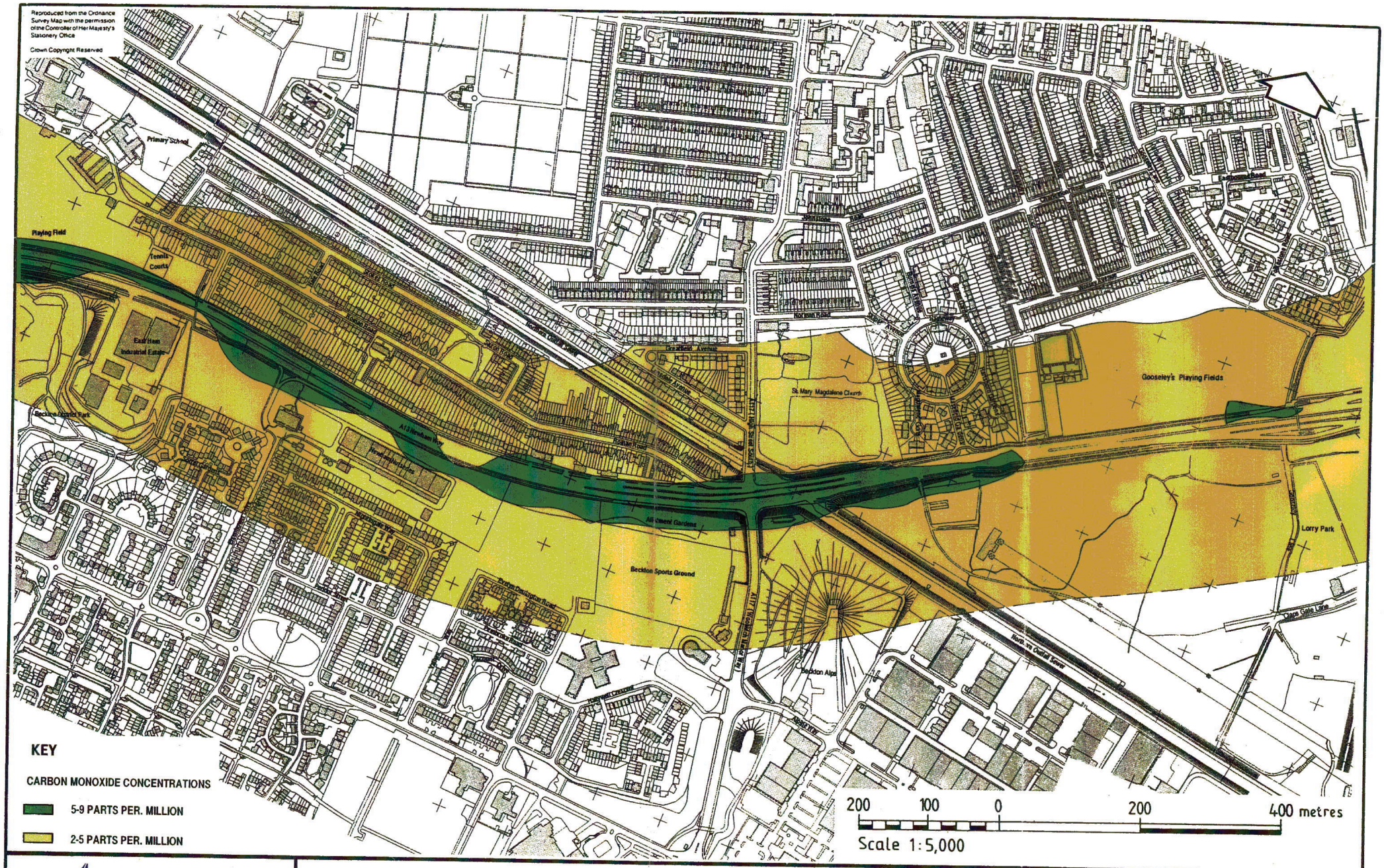
FIGURE 2.10



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AIR QUALITY (VOLUME II)
1991

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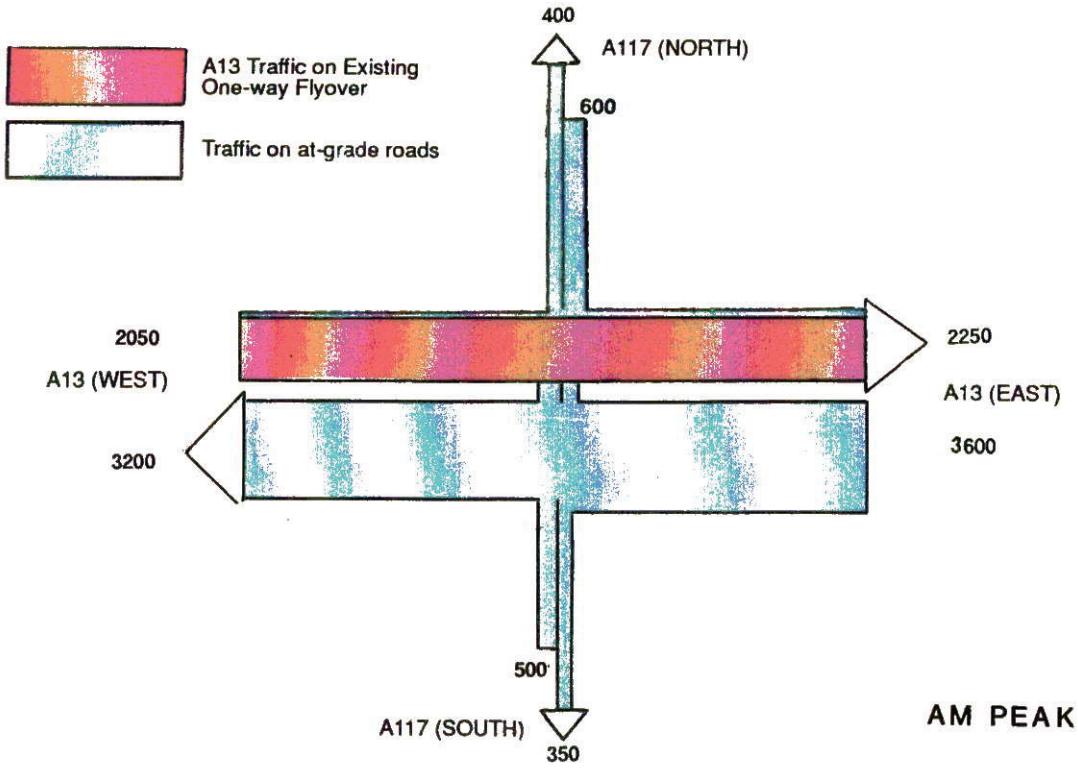
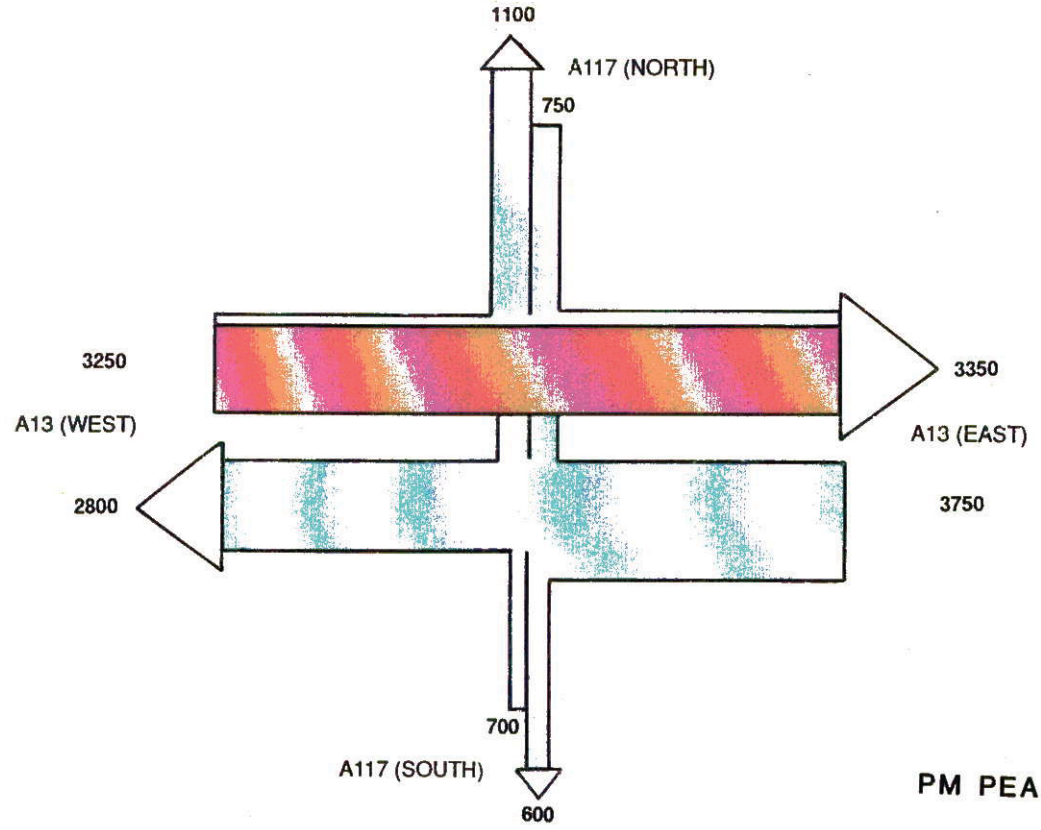
FIGURE 2.11





Notes

1. The width of each line is in proportion to the volume of traffic, so the thicker the line the more the traffic.
2. All traffic flows are given in vehicles per hour.

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FORECAST TRAFFIC FLOWS IN 2012 – DO MINIMUM

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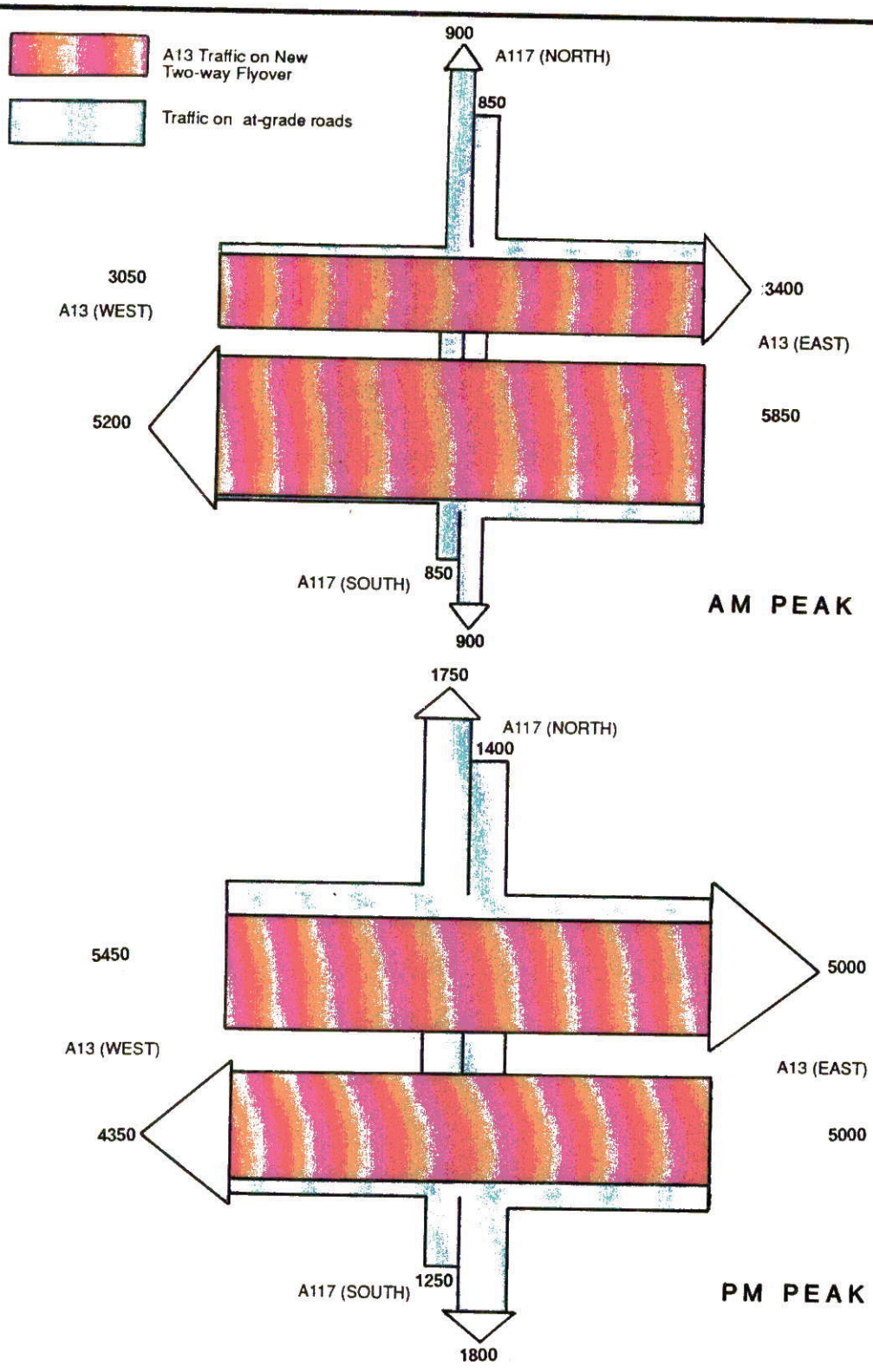
FIGURE 4.1



Notes

1. The width of each line is in proportion to the volume of traffic, so the thicker the line the more the traffic.
2. All traffic flows are given in vehicles per hour.

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FORECAST TRAFFIC FLOWS IN 2012 – WITH SCHEME

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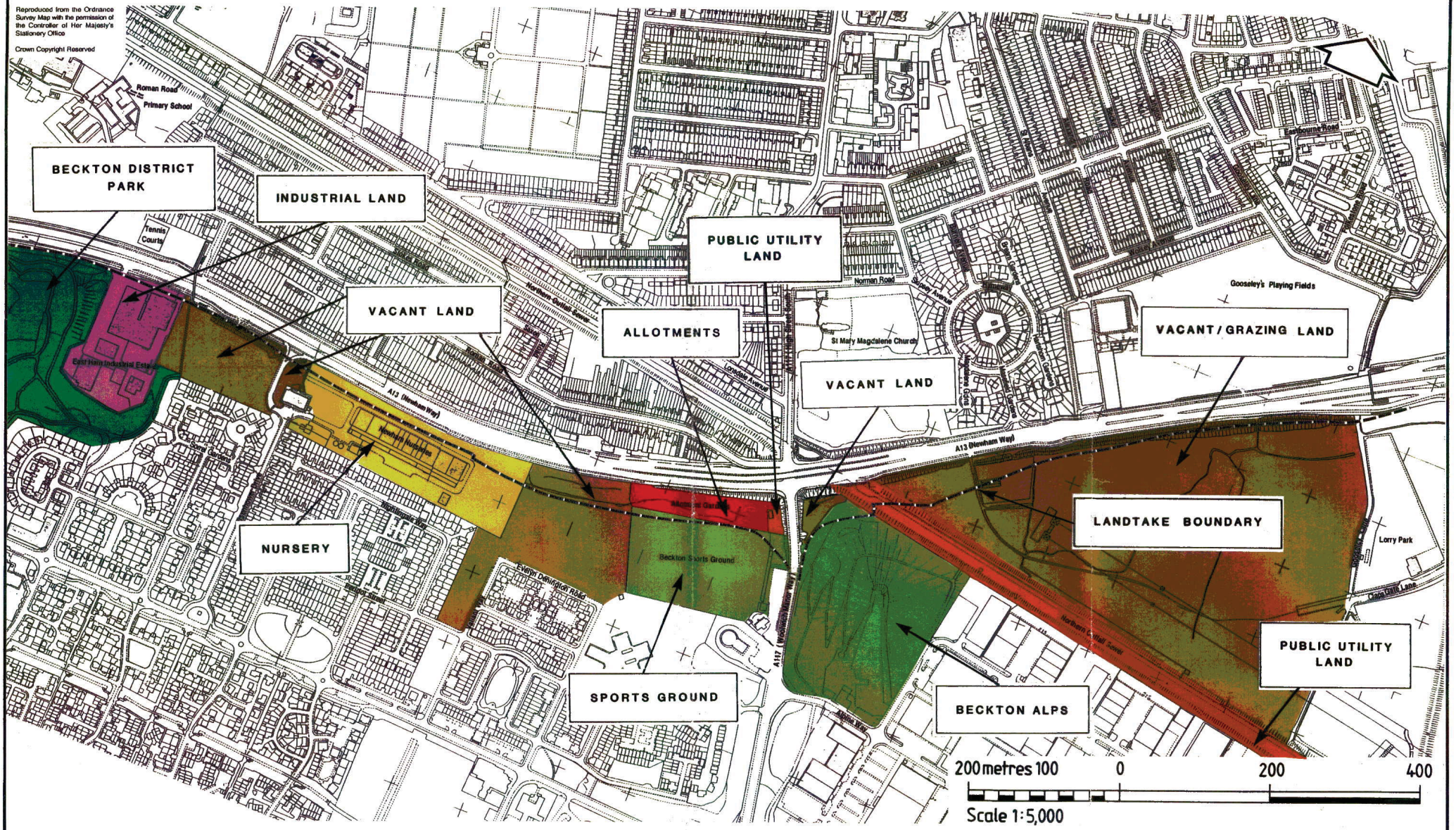
FIGURE 4.2



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CATEGORY OF LAND TAKE

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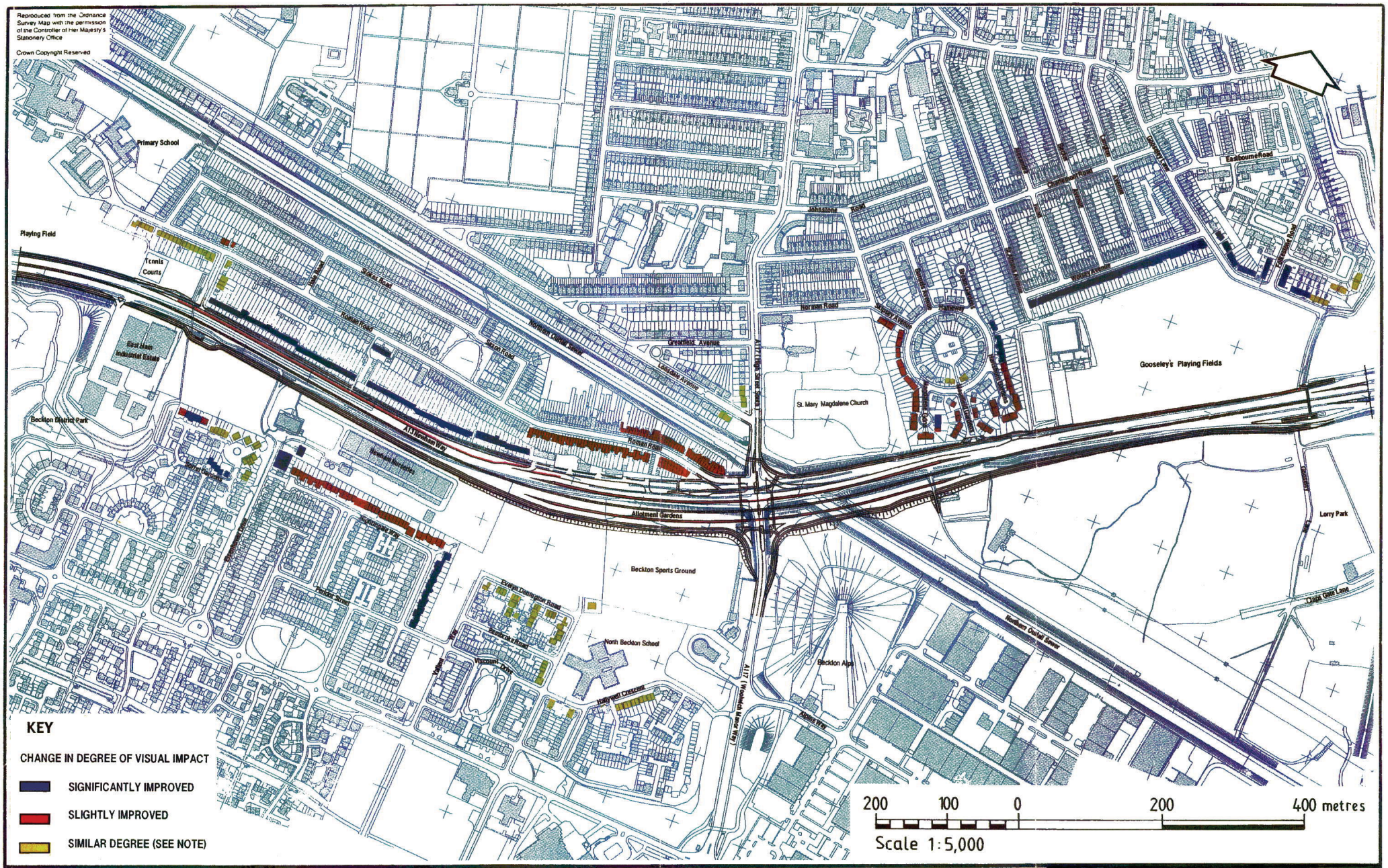
FIGURE 4.3



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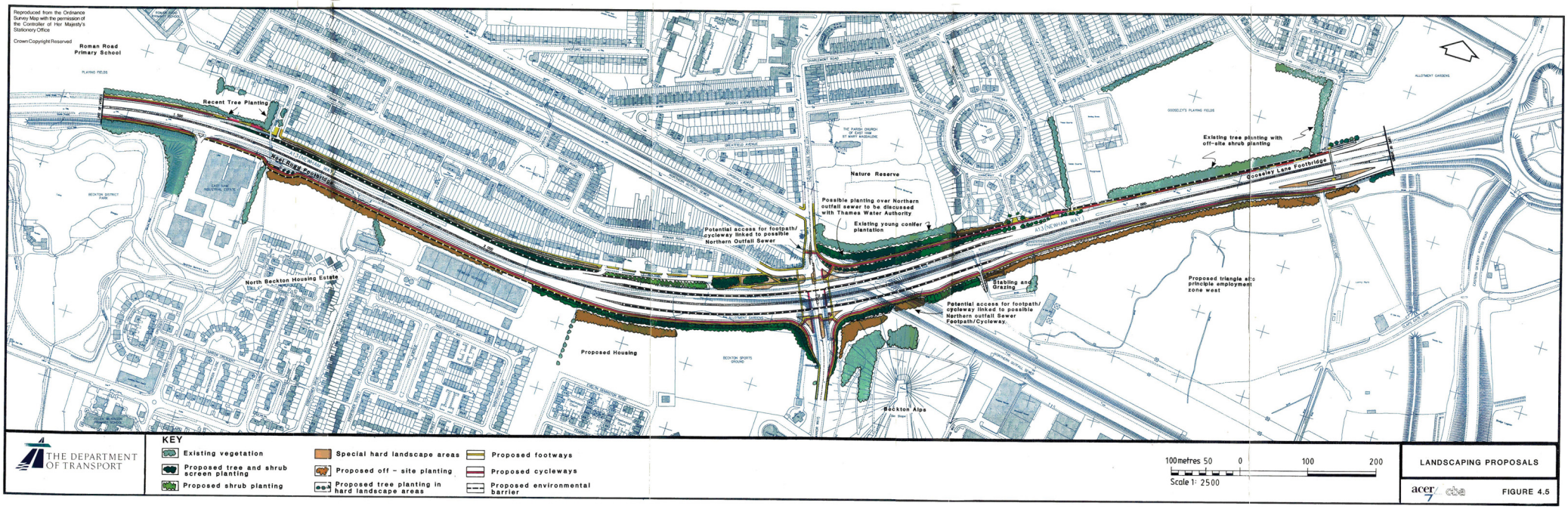
NOTE : Similar degree category refers to properties currently affected by the existing road.

VISUAL INTRUSION

acer cba

FIGURE 4.4

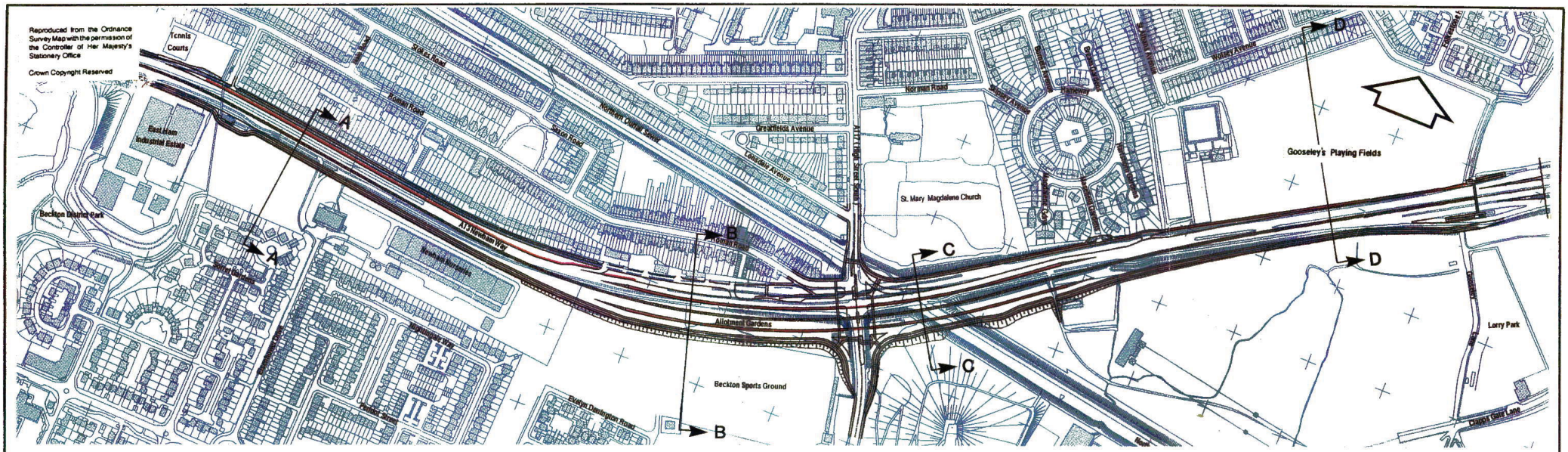


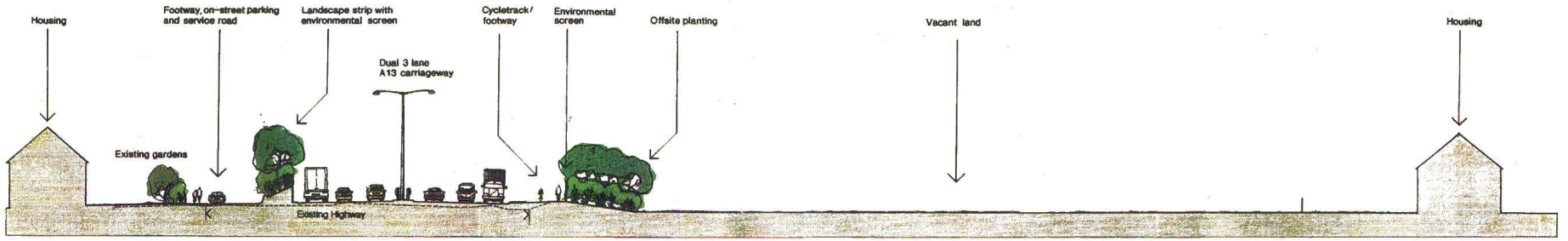
THE DEPARTMENT OF TRANSPORT

LANDSCAPING PROPOSALS

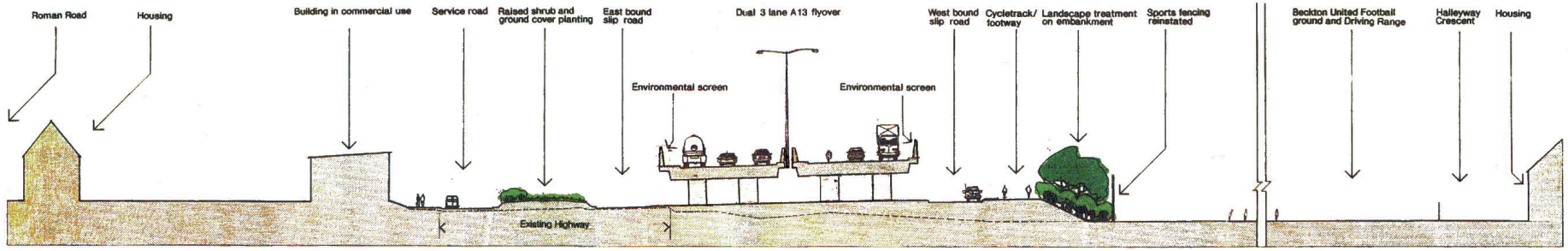
acer cba

FIGURE 4.5





Section AA



Section BB

THE DEPARTMENT OF TRANSPORT

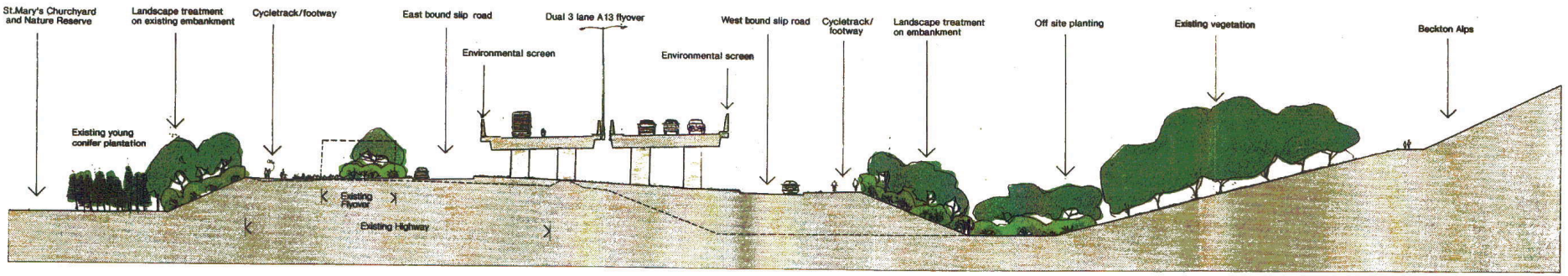
NOTE: The planting shown assumes approximately 10 years of growth

CROSS SECTIONS OF PROPOSED SCHEME

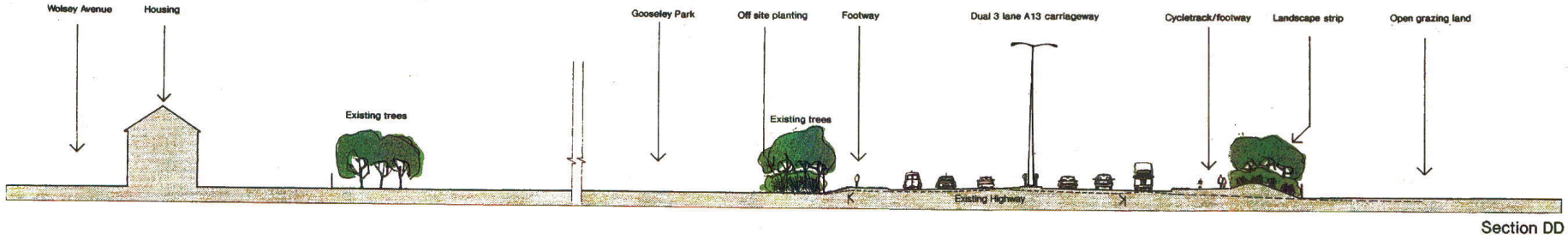
SHEET 1 of 2

acer cba

FIGURE 4.6



Section CC



Section DD

THE DEPARTMENT OF TRANSPORT

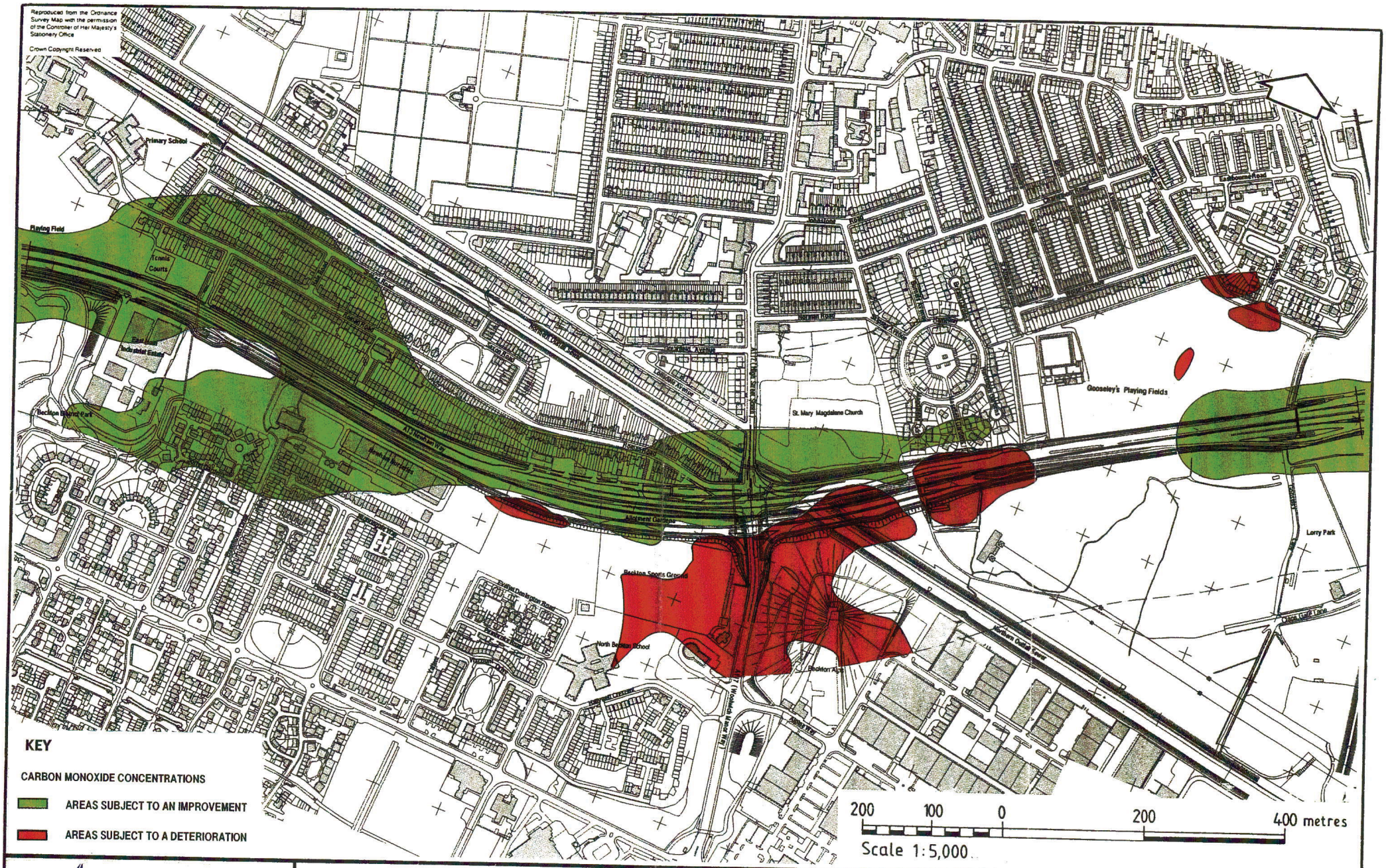
NOTE: The planting shown assumes approximately 10 years of growth

CROSS SECTIONS OF PROPOSED SCHEME

SHEET 2 of 2

acer cba

FIGURE 4.6

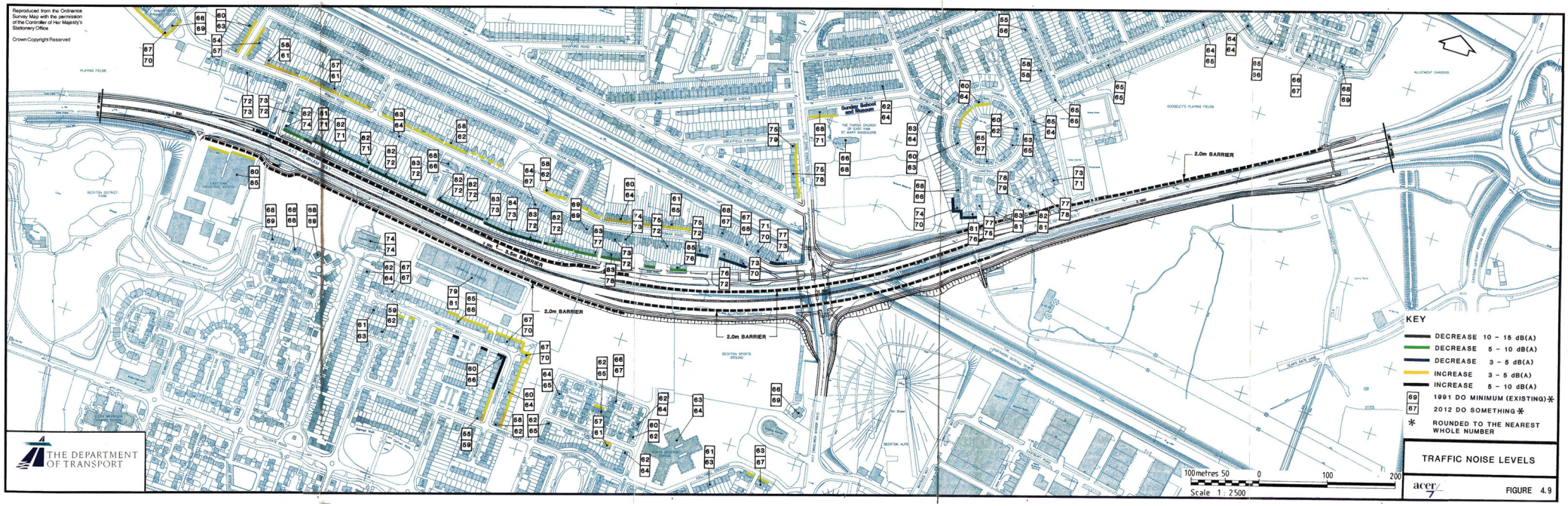


THE DEPARTMENT OF TRANSPORT

AIR QUALITY (VOLUME II)
DO MINIMUM - DO SOMETHING
2012

acer AEL

FIGURE 4.8


Reproduced from the Ordnance Survey Map with the permission of the Controller of Her Majesty's Stationery Office
Crown Copyright Reserved
2.0m BARRIER
2.0m BARRIER
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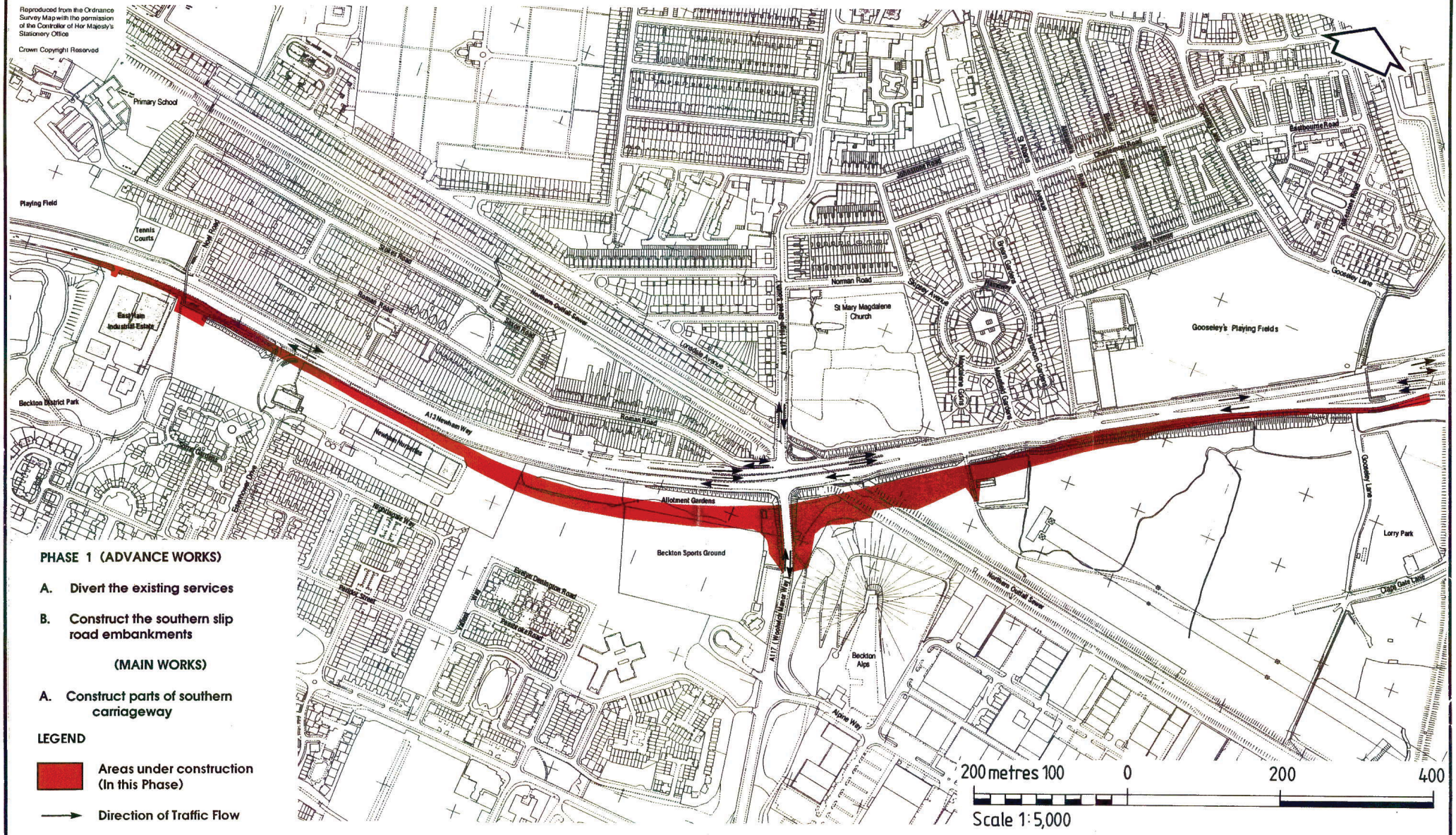
2.0m BARRIER
KEY
DECREASE 10 – 15 dB(A)
DECREASE 5 – 10 dB(A)
DECREASE 3 – 5 dB(A)
INCREASE 3 – 5 dB(A)
INCREASE 5 – 10 dB(A)
69 1991 DO MINIMUM (EXISTING)*
67 2012 DO SOMETHING*
* ROUNDED TO THE NEAREST WHOLE NUMBER
100metres 50 0 100 200
Scale 1 : 2500
THE DEPARTMENT OF TRANSPORT
TRAFFIC NOISE LEVELS
acer
FIGURE 4.9

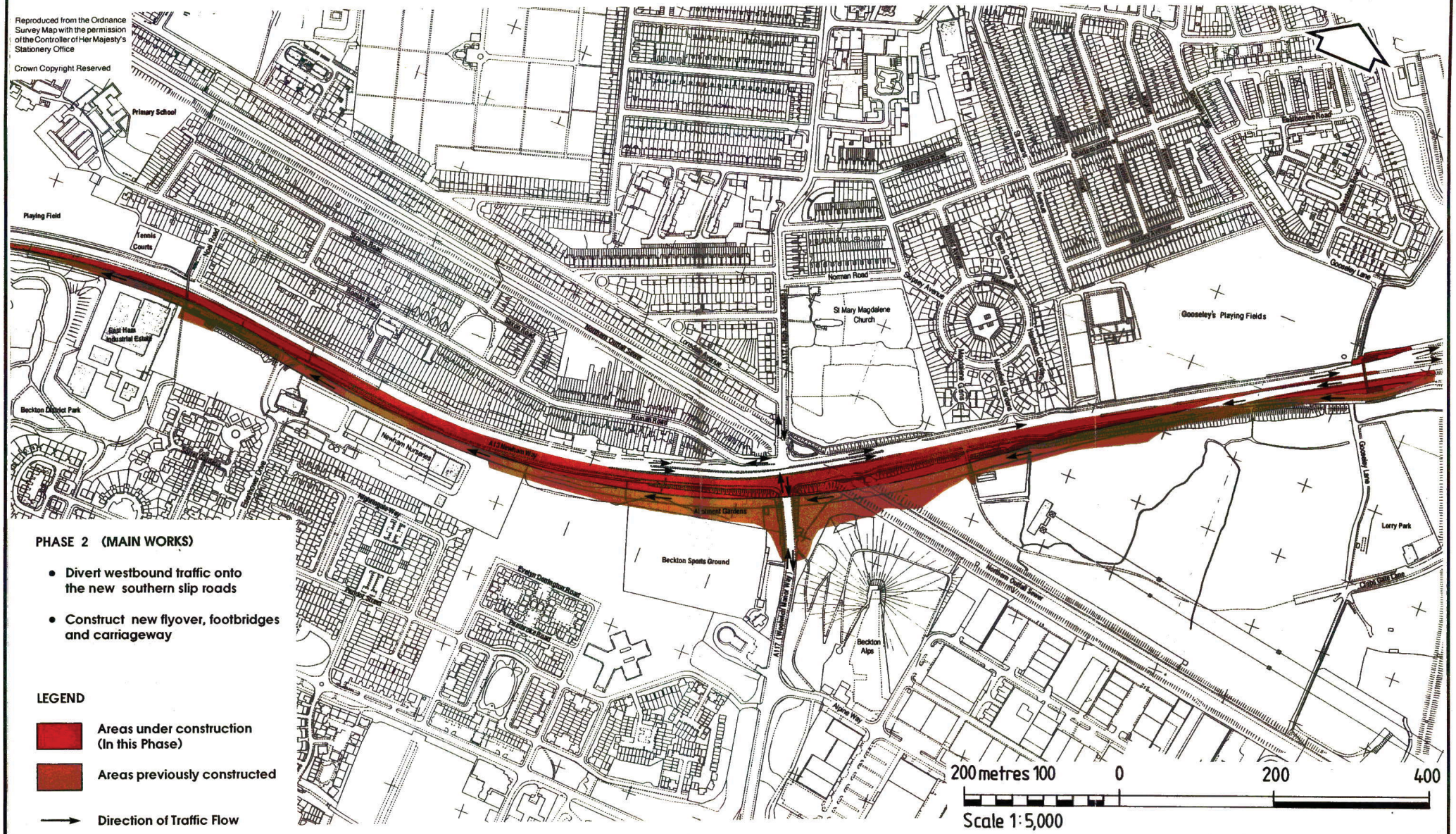


THE DEPARTMENT OF TRANSPORT

CONSTRUCTION PHASE 1

acer

FIGURE 5.1

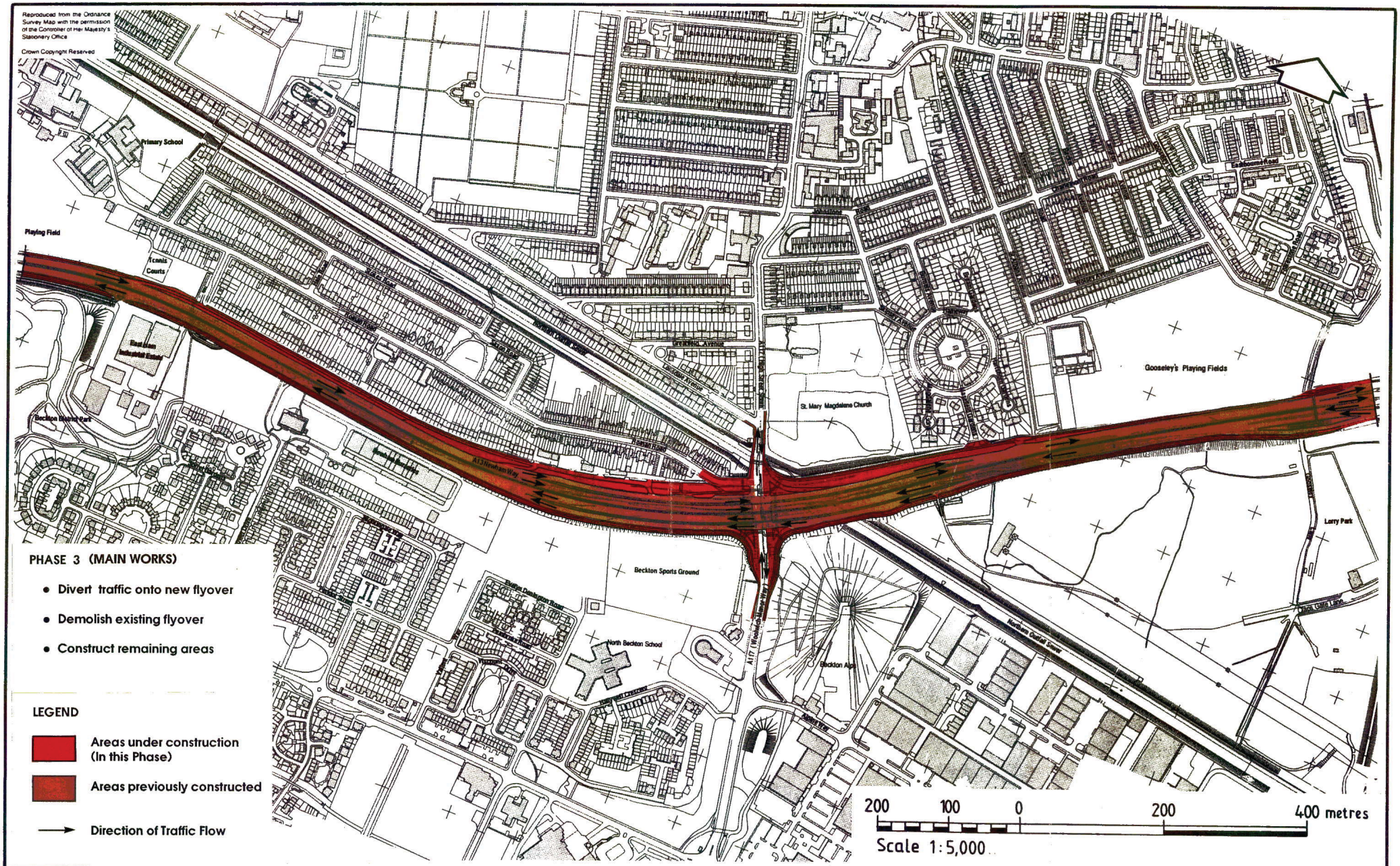


THE DEPARTMENT OF TRANSPORT

CONSTRUCTION PHASE 2

acer 7

FIGURE 5.2



THE DEPARTMENT OF TRANSPORT

CONSTRUCTION PHASE 3

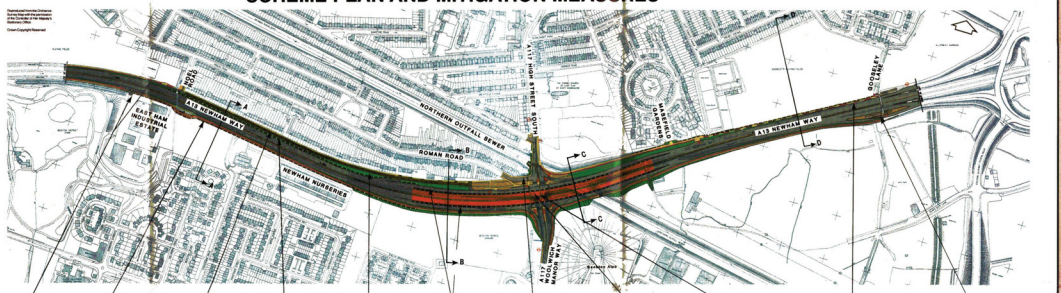
acer

FIGURE 5.3

SCHEME PLAN AND MITIGATION MEASURES

LEGEND

- New or improved carriageway at or near existing level
- New or improved carriageway above existing ground level
- Paved areas / Central Reserve
- Grass / Landscaped areas
- Footways
- Cycleways
- Service road and on-street parking
- Bus Stop
- Traffic Signals



New Access | 2.0 metre high environmental barrier | Service road and on street parking | 3.5 metre high environmental barrier | Landscaped buffer zone | 2.0 metre high environmental barriers on the viaduct | Improved Roman Road access | Signalled pedestrian & cyclist facility through junction | Substantial landscaping around the junction | 2.0 metre high environmental barrier to replace the existing fence | New footbridge suitable for cyclists and pedestrians

DESCRIPTION OF THE PUBLISHED SCHEME

The scheme provides for a two-level interchange in which the A13 through traffic is carried over the A117. It involves a 2km realignment of the trunk road to the south of the existing road.

The A13 would be a dual three lane carriageway except between the east-facing slip roads from the A117 and those onto the A406 where each carriageway would be four lanes.

From west to east, the A13 would be at existing levels for approximately 850 metres, then rising onto a flyover 550 metres long over the A117. It would then continue for approximately 600 metres at existing levels to Gooseley Lane. The southern slip roads would need to be constructed on embankments to pass over the northern outfall sewer. The northern slip roads would be at the same level as the existing road.

Features incorporated in the proposals which would result in an improvement in facilities for the local community include:

- safer and easier access to Roman Road
- improved facilities for pedestrians and cyclists. At the A117 junction there will be signal controlled pedestrian and cyclists facilities and the existing Gooseley Lane footbridge will be replaced to cater for use also by cyclists
- a new service road with on-street parking facilities would be provided for the houses fronting the A13 in the north-west
- enhanced visual appearance for local residents and road users through provision of environmental barriers with additional landscaping
- new overhead lighting would be provided throughout the scheme

VIEW OF PROPOSED SCHEME FROM BECKTON ALPS

ENVIRONMENTAL EFFECTS

Buildings Demolished

An electricity sub station on the south-west of the A13/A117 junction and the stables south of the A13 opposite Masefield Gardens would be demolished.

Land use and Land Take

In general, apart from the allotments, the impact of the proposed scheme on existing land uses will be small and the land take will not have a significant impact on the adjacent land uses. Areas required would be 0.07 ha of industrial / commercial land, 0.07 ha of public open space, 3.48 ha of vacant and grazing land, 0.19 ha of recreational land and 0.67 ha of allotments.

Accidents

It is estimated that every year there would be an average reduction of 16 personal injury accidents.

Disruption during construction

It is proposed to construct the works in two phases of six months and two years duration respectively. The existing traffic capacity of the junction would be maintained through the construction period. As the alignment of the new route would generally be to the south, the existing flyover would remain in use whilst the new one is constructed. The cycle track on the south side of the A13 would not be available for use until completion. There would be some disruption and nuisance during construction to residents near the A13 and at the junction of A13 / A117. However, construction traffic would generally be prevented from using residential side roads.

Travellers

Relief of traffic congestion would save travelling time (including on public transport) and reduce driver stress. There would be improved facilities for pedestrians and cyclists.

Access

Access at Roman Road would be substaintially improved. The houses fronting the A13 in the north-west would have better access from A13, including a new service road and on-street parking facilities.

Visual Impact

The proposed mitigation measures would considerably reduce the overall degree of visual impact of the road on residential properties. The proposed flyover, being larger than the existing, would increase the degree of visual obstruction for properties south of the A13.

Severance

Generally the community would have less tra
benefit from improved road crossing facilitie
the improved A13 / A117 junction. It would
and safer access, particularly for pedestria
The properties fronting the A13 Newham Wa
from reduced severance due to the provi
service road and parking area.

Noise

It is estimated that in the year 2012, 96 pr
experience a decrease in noise levels, of wh
would benefit from a considerable decrease
221 properties would experience a slight
14 properties a noticeable increase.

Air Quality

It is estimated that in the year 2012, for
scheme, 510 properties would have an impr
Quality (carbon monoxide levels) while
would have a deterioration.

Ecology

The proposed scheme would not affect
designated sites of ecological importance. Ho
various sites of borough importance wou
directly by land take. These impacts woul
ecological significance.

Archaeology

It is possible that the proposed schem
archaeological interests in the area. Site ev
carried out prior to construction to ensure that
archaeological excavations can be made.

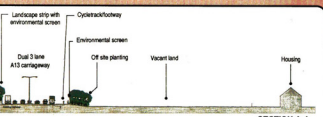
Architecture and Vibration

The only building of architectural interest i
Magdalene Church (a Grade I listed buildin
that this building would be affected by th
However, it is proposed to closely monitor the
of the church during construction. With the sch
levels at properties in Newham Way would l

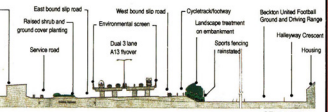
Geology and Drainage

The proposed scheme does not requ
excavations and thus, the local geology
affected. Road drainage water would b
through existing sewers.

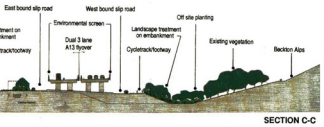
More information on these items can be found in the Environmental St



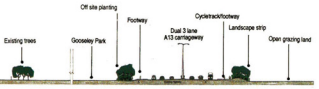
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

CROSS SECTIONS
(FOR LOCATIONS SEE SCHEME PLAN)

EXISTING SITUATION

The A13 Trunk Road is one of London's main eastern radial routes linking Docklands and the industrial and commercial development on the north bank of the Thames between Barking and Thames Haven to the M25.

Within the scheme area the existing A13 is a dual three lane carriageway with a one-way flyover taking the eastbound traffic over the A117 (Woolwich Manor Way/High Street South). The westbound traffic is directed through the traffic signal controlled junction at ground level.

The A117 is a single two-way carriageway providing access to East Ham and the Docklands area through the signal controlled junction at A13.

The topography of the area is generally flat. Over the years much of the area has been developed for housing, industry, recreational facilities and open space. In the north-west of the junction, residential areas predominate whilst to the south-west there is a mixture of land use including an industrial estate, a golf driving range, nurseries, allotments and residential areas. To the north-east there is predominantly open space including a chuchyard and a park with the remaining area being occupied by a residential development. Similarly to the south-east the area is mainly open with the Beckton Alps dry ski slope being a notable feature.

The junction is unable to cope satisfactorily with current traffic demands resulting in congestion on the westbound A13 carriageway and on the A117. With increasing traffic the situation will deteriorate with an associated worsening of the overall environment and effect on the local community.

This is a summary of the Environmental Statement issued in accordance with EC Directive 85/337 as applied by section 105A of the Highways Act 1980. The full Environmental Statement comprises Volume I: Environmental Statement and Volume II : Specialist Reports (4 Reports). These can be inspected at :

The Department of Transport London Regional Office Room C4/19 2 Marsham Street London SW1P 3EB	The Department of Transport London Regional Office Docklands Division South Quay Plaza II 183 Marsh Wall London E14 9SH	London Docklands Development Corporation Royal Docks Office Gate 8 North Side Royal Victoria Dock Connaught Road London E16 1BL	London Docklands Development Corporation Thames Quay 191 Marsh Wall London E14 9TJ
East Ham Reference Library High Street South East Ham London E6 4EL	London Borough of Newham Town Hall East Ham London E6 2RP	North Woolwich Library Pier Road North Woolwich London E16 2LH	London Borough of Newham Technical Services 25 Nelson Street East Ham London E6 4EH

Copies of the Environmental Statement can be purchased from The Department of Transport, at the London Docklands Division's address shown below. The costs are as follows :

Volume I - £100.00
Volume II - £ 60.00 (or £15.00 per report)

VIEWS AND OBJECTIONS

Anyone wishing to comment on, or object to, any aspect of the published proposals should write to the Secretary of State for Transport at the offices of the Department shown below, not later than 7th January 1993 stating the grounds for objections.

In preparation of an objection, an objector should bear in mind that the Department may find it necessary to communicate the substance of any objection or representation to other people who may be affected by it. Only after carefully considering all objections and representations, after full consideration of the Inspector's report and recommendations following any public inquiry, will the Secretaries of State for the Environment and Transport decide whether Orders should be made, with or without modifications, or be abandoned.

Unwithdrawn objections made to the Orders previously published in October 1990 will remain valid.

FURTHER INFORMATION

Further information about the Draft Orders can be obtained by writing to:

The Department of Transport
London Docklands Division
5th Floor North
South Quay Plaza II
183 Marsh Wall
London E14 9SH

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THE DEPARTMENT OF TRANSPORT

A13 /A117 JUNCTION IMPROVEMENT

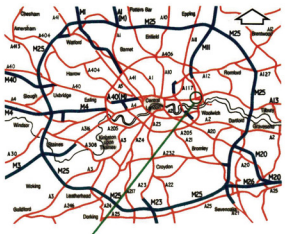
ENVIRONMENTAL STATEMENT

Non-Technical Summary

September 1992

The Department of Transport has re-published Draft Orders for the A13 / A117 Junction Improvement Scheme.

This leaflet describes the proposed scheme and outlines its environmental effects.



A13 / A117 JUNCTION

INTRODUCTION

The A13 Trunk Road is a main radial road through east London linking the M25 motorway with industrial and commercial developments on the north side of the River Thames.

The Department of Transport proposes a new interchange at the junction of the A13 and A117 in order to relieve the congestion. This proposal forms part of a series of improvements which the Department proposes to undertake along the A13.

An Environmental Statement has been prepared which contains an assessment of the environmental effects of the scheme. This leaflet is a summary of the Environmental Statement in non-technical language.

BACKGROUND

A public exhibition and presentation of this scheme was held in October 1989. The scheme was generally welcomed locally and as a result of comments made at the time, the following modifications were made:

- The proposal to make Noel Road two way at its junction with the A13 was deleted to maintain the present traffic arrangement
- The environmental barrier at Masefield Gardens has been extended to Gooseley Lane
- The environmental barrier on the north-west side has been extended further to the west by 25 metres

Draft Orders incorporating these changes were published in October 1990. In November 1990, an exhibition was held to explain and publicise the proposals. A Supplementary Compulsory Purchase Order was published in May 1991.

Since the publication of Draft Orders, the environmental impact has been re-assessed to take account of revised traffic forecasts and additional information now available.